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# Social axioms: A new culture measure for South African business research

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This study is intended to introduce social axiom theory to South African business researchers and, in this process, to provide new empirical evidence pertinent to the South African context. We examine social axioms in the largest and most representative national metropolitan population ever studied, providing scores for social axiom dimensions at the individual-level and nation-level, as well as assessments of relations with sociodemographics, values, personality and life satisfaction. The results support the convergent validity, discriminant validity and composite reliability of the 25-item brief version of the *Social Axioms Scale*. We extend prior research on social axioms and personality by examining relations with optimum stimulation level (OSL), an important personality construct studied in marketing and human resource management. A hierarchical regression model illustrates the power of social axioms in predicting life satisfaction, over and above the effects of sociodemographics, values and optimum stimulation level. Several points of departure for fruitful business research are identified.

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## Introduction

“I do not want my house to be walled in on all sides and my windows to be stuffed. I want the cultures of all the lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any.”

Mohandas K. “Mahatma” Gandhi, 1869-1948

South African companies face many new challenges in the changing globalised business environment. Barriers to international trade, investment, migration and travel fall at every turn. Advances in information and telecommunications technologies continually change the accessibility, content, and use of information by individuals, social networks and organisations. Stakeholder demands for social and environmental sustainability are accelerating. In this increasingly interconnected, interdependent and rapidly-changing business environment, culture is an enduring and often invisible influence.

The rapid pace of change is matched by the rapidity with which culture has moved front and centre in scholarly research and business practice. In scholarly research, the proportion of cross-cultural research articles in top business and psychology journals has grown three-fold in twenty years—so much so that at least ten reviews of cross-cultural organisational and business research have appeared since 2003 in leading journals, such as *Journal of International Business Studies*, *Academy of Management Journal*, *Journal of Management* and *Organisational*

*Research Methods* among others (see Chen, Leung, & Chen, 2009: 218-219). In business practice, South African senior managers are calling for more cultural research too (e.g., Horwitz, Ferguson, Rivett & Lee, 2004). It is in this vein that Usunier and Lee (2009) claim that culture remains the single most enduring factor to influence the success of marketing strategies.

Attempts to interpret cultural differences in business research traditionally focus on values. There are several approaches to mapping values, the most comprehensive and theory-driven being that of the psychologist Shalom Schwartz. According to Schwartz (1992), values are desirable, trans-situational goals that vary in importance and serve as guiding principles in life. In the form of conscious goals, values represent responses to three universal requirements with which all individuals and societies must cope: needs of individuals as biological organisms, requisites of coordinated social interaction, and requirements for the smooth functioning and survival of groups. Values underlie most aspects of daily life, reflect the importance of fundamental motivational goals in life and provide a basis for reliable comparisons of individuals, groups and cultures (Schwartz, Melech, Lehmann, Burgess, Harris, & Owens, 2001). Values research has enriched our understanding in domains such as accounting (Jansen, Merchant & Van der Stede, 2009), human resource management (Budhwar & Sparrow, 2002; Gerhart & Fang, 2005; Smith, Peterson & Schwartz, 2002), marketing (Burgess, 1992; Steenkamp, 2000) and strategy (Peng, Wang & Jiang, 2008).

Convergence in cultural value mappings and extensive enquiry devoted to the construct are prompting calls to “broaden the net” to include new culture constructs in cross-cultural business research (Leung, Bhagat, Buchan, Erez & Gibson, 2005; Smith, 2004; Steenkamp, 2005). New constructs should help explain cultural variations that are not detected by the value perspective or provide needed triangulation for well-known results based on values (Leung, Bond, De Carrasquel, Munoz, Hernandez, Murakami *et al.*, 2002). In response to these calls, Leung and Bond are orchestrating the most recent large-scale programmatic attempt to broaden the dimensional map of culture (Bond, Leung, Au, Tong, De Carrasquel, Murakami *et al.*, 2004; Leung *et al.*, 2002).

Drawing on Rotter’s (1966) characterisation of locus of control, Leung and Bond conceptualise *social axioms* as generalised expectancies about the world and how it works, typically taking the form  $A \rightarrow B$  and may be causal or correlational. Beginning with qualitative research in Hong Kong and Venezuela and using some items culled from the literature, their collaborative team developed a measurement scale, collected data in over 40 cultures and identified social axiom dimensions at the levels of individuals and nations, which include South Africa (university students, Bond & Leung, 2009; Bond, Leung, Au, Tong, De Carrasquel *et al.*, 2004) and (police recruits, Barnard, Rothmann & Meiring, 2008).

Although in its infancy, social axioms research has identified links to individual, organisational and national characteristics such as personality, subjective well-being, demography, human and economic development, political/regulative environment and gender equity (Bond, Leung, Au, Tong, De Carrasquel *et al.*, 2004). Social axioms add moderate predictive power over and above that provided by values in domains such as leadership and governance styles, organisational conflict, conflict resolution, coping styles, vocational choices, organisational commitment and organisational citizenship behaviour of individuals and groups (e.g., Bond, Leung, Au, Tong & Chemonges-Nielson, 2004; Kwantes & Karam, 2009). These promising findings suggest that the traditional focus on values may be neglecting important beliefs about social contingencies, which potentially shape individual and group behaviours of interest to business researchers (Bond & Leung, 2009).

The current research is intended to introduce social axiom theory to South African business researchers and, in this process, to provide new empirical evidence pertaining to the South African context. We focus on understanding social axioms in the South African business context. During the early stages of theory-building, social axioms research has focused primarily on university students, who are hardly likely to be representative of populations in an emerging market, such as South Africa. Further advances in business research require research in more representative samples (c.f. Burgess & Steenkamp, 2006). It is noteworthy that the current sample is the largest and most nationally-representative ever studied in the social axioms literature.

The primary contributions of the study are empirical. First, we examine social axioms in representative South African metropolitan populations that are studied often in business research, providing scores for social axiom dimensions at the individual-level and nation-level, as well as assessments of relations with sociodemographics, values, personality and life satisfaction. This is important because South Africa social axiom scores are not available and it is not clear that previously observed nomological relations with other psychological constructs will apply in a large, representative emerging market sample. We examine relations with optimum stimulation level (OSL), an important personality construct studied in marketing and human resource management. OSL has positive relations with satisfaction with life, a focus of substantial inquiry in domains such as marketing, human resource management, economics and environmental and social sustainability. We illustrate the power of social axioms in predicting life satisfaction over and above that provided by sociodemographics, values and optimum stimulation level, using hierarchical regression. Second, we rigorously assess the measurement properties of the 25-item brief version of the *Social Axioms Scale* (SAS) using the confirmatory factor analysis approach. This is an important contribution in its own right. The sample includes respondents with low formal education, presenting a difficult test for the SAS in a typical emerging markets business research application.

The article is organised in the following way. Social axiom theory is reviewed briefly in the next section. The methodology and results are then reported in following sections. The paper closes with a discussion of the results and recommendations for future research.

## Social axiom theory

*Social axioms* are defined formally as “generalized beliefs about oneself, the social and physical environment, or the spiritual world, and are in the form of an assertion about the relationship between two entities or concepts” (Leung *et al.*, 2002: 289). Social axioms are *social* because they refer to the social world rather than oneself. Social axioms are *axioms* because they refer to basic premises that people endorse, rely upon and use axiomatically when making sense of the social world and choosing how to behave in it.

Social axiom theory is a social learning theory. It holds that people actively observe their material, interpersonal, social and spiritual universe, gauging its opportunities and constraints and evaluating its reinforcement contingencies (Leung & Bond, 2004; Leung *et al.*, 2002). Through a process of continual observation, assessment and construal, people learn generalised beliefs about the social world and behavioural outcomes in it. They express these social axioms consciously and unconsciously in their behaviour (Bond & Leung, 2009). Social axioms guide behaviour in the broad domains of social interaction and problem-solving and play a central and organising role in people’s belief systems. Social axioms are theorised to serve at least four major functions that enhance the survival and effective

functioning of people in their social and physical environments: understanding the social and physical world (knowledge), manifesting people's values (value-expressive), attaining important goals (instrumental), and protecting self-worth (ego-defensive). Leung and Bond (2004) argue that social axioms are universal because they assist in confronting universal problems of survival and functioning of individuals and groups (c.f. Schwartz, 1992).

## Dimensions of social axioms

Leung and Bond and their associates identify five individual-level and two nation-level dimensions of social axioms empirically in tests conducted in more than 40 cultures (Bond & Leung, 2009; Bond, Leung, Au, Tong, De Carrasquel *et al.*, 2004). Differences in dimensionality are common in cross-cultural analysis when data are analysed at different levels of aggregation (e.g., Schwartz, 2006). This distinction among "levels of analysis" is important because using dimensions extracted at one level (i.e., individual or nation) to draw inferences at another level is a fallacy (Robinson, 1950; Thorndike, 1939).

### Individual level dimensions

Religiosity, fate control, social complexity, reward for application, and social cynicism comprise the five individual-level dimensions. *Religiosity* refers to a general belief that a Supreme Being exists and that religious beliefs and institutional practices can be beneficial to society. *Fate control* is a general belief that impersonal, external forces determine life events but that people can influence outcomes. *Social complexity* refers to a general belief that the complexity of people and social interactions precludes rigid rules in life, instead requiring procedural flexibility; people high on social complexity expect inconsistencies in human behaviour to present many ways to achieve a given outcome in social relations. *Reward for application* is a general belief that effort, knowledge, and careful planning will lead to positive results. *Social cynicism* concerns mistrust of social institutions and disregard of ethical means for achieving ends in life. It refers to a general negative expectations about human nature, outcomes of interactions with others and social institutions.

### Cultural-level dimensions

Two cultural-level dimensions emerge from ecological analysis, dynamic externality and societal cynicism. *Dynamic Externality* is a composition of items that constitute four distinct social axiom dimensions: reward for application, religiosity, fate control, and social complexity. Dynamic externality emphasises proactive mobilisation of psychological resources by people, as individuals and group members, to confront environmental constraints and difficulties. The outcomes of this simplistic struggle with external forces are influenced by a Supreme Being and fate. The emphasis on effort and control gives this construct a *dynamic* quality, while elements of religiosity and fate give rise to its *externality*. Cultures high on dynamic externality

expect the collective to reward fair, altruistic and caring behaviour and to provide role clarity and rules for fairness in individual and group relations. Dynamic externality relates positively to embeddedness, hierarchy, power distance, conservatism, and negatively to indices of human development. In the organisational context, it promotes reliance on vertical sources of guidance. The Project GLOBE factors of humane orientation, in-group collectivism, uncertainty avoidance, and future orientation also relate positively to dynamic externality.

*Societal cynicism* comprises items measuring social cynicism. It reflects predominantly cognitive assessments of the world as mean-spirited, unworthy of trust and rife with malevolence; apprehension about the motives of people, groups and institutions; and a belief system that powerful people and institutions oppress the citizenry for selfish and malignant purposes. Societal cynicism relates positively to survival values. Societal cynicism is highest when human development is low. Bond *et al.* (2004) posit that certainty is idealised when societal cynicism is high, because it is associated with a benign environment. Striving for high performance is emphasised less, due to the general expectation for negative outcomes and suspicion of social systems as untrustworthy.

## Associations with values, life satisfaction and optimum stimulation level

Behavioural researchers have long conceptualised cognitions, motives and personality traits as related but distinct constructs (see Bilsky & Schwartz, 1994; Burgess, 1992; Chen, Bond & Cheung, 2006; Chen, Fok, Bond & Matsumoto, 2006; Leung & Zhou, 2008; Winter, John, Stewart, Klohnen & Duncan, 1998). They are related in that social axioms, values and personality traits all serve as distal influences that guide attention, cognition and behaviour. Additionally, social axioms and traits channel goal-directed behaviour, while social axioms and values are types of centrally-held beliefs. They are distinct in that social axioms describe judgments about the social world, whereas values and traits describe differences in self-description or self-perception. In any particular behaviour that interests business researchers, social axioms, values and personality traits may be important influences that act alone or in concert to affect behavioural outcomes.

Before proceeding to outline relevant prior research on psychological correlates of social axioms, it is helpful to clarify some important distinctions between social axioms, values and traits. Social axioms are cognitions about others and the environment, presuming that actions manifest beliefs about *the world and how it functions* (Leung *et al.*, 2002). Values are motivational goals that cognitively transform conscious and unconscious needs (Rokeach, 1973). Values theories presume that actions flow from centrally-held motives reflecting *what a person wants in life*. Traits are basic, relatively-fixed dispositions that direct affect, cognition and behaviour toward stylistic and habitual patterns (Winter *et al.*, 1998), presuming that actions flow from *what a person is like*. Thus, social

axioms guide behaviour by construing *how* behavioural strategies and tactics are likely to affect the attainment of desired behavioural outcomes, while values and traits guide behaviour by defining *what* goals should be pursued and *which* behavioural patterns will be employed, respectively (c.f. Leung & Zhou, 2008). People differ in the social axioms that they endorse, but also in the importance placed on a particular value and how much of a trait characteristic they exhibit.

The behavioural influences and interrelations of cognitions, motives and traits are the subject of several theories, such as belief system theory (Rokeach, 1973), expectancy-value theory (Feather, 1992; Fishbein & Ajzen, 1975), the five-factor theory (McCrae, 2000) and cognitive consistency

theory (Festinger, 1957). However, despite considerable inquiry into specific beliefs, generalised beliefs have received little attention. Consequently, the complex linkages between social axioms (i.e., generalised beliefs), values (i.e., generalised valences) and traits (i.e., generalised patterns or styles) are not well understood (Leung & Zhou, 2008). Leung, Bond and their associates are taking the first tentative steps toward building a coherent conceptual framework relating social axioms with other psychological constructs (Leung, Au, Xu, Kurman, Niit & Niit, 2007; Leung & Bond, 2009). Current work is summarised in Table 1. In this spirit, we examine relations with values, OSL, and SWL.

**Table 1: Social axioms: Nomological relations with values, life satisfaction and personality**

Personality construct	Observed and theorised relations with social axioms				
	Religiosity	Fate control	Social complexity	Reward for application	Social cynicism
<i>Motivational value types<sup>a</sup></i>					
Self-direction	(-)	(-)	(+)		(-)
Stimulation	(-)				
Hedonism	(-)			(-)	
Achievement	(-)			(+)	
Power	(-)		(-)	(+)	(+)
Security					
Tradition	(+)	(+)	(-)	(-)	
Conformity	(+)		(-)	(+)	(+)
Universalism			(+)		(-)
Benevolence	(+)		(+)		
<i>Satisfaction with life<sup>b,c</sup></i>	(+)		(-)	(+)	(-)
<i>Personality measures</i>					
<i>Five-factor theory: NEO-FFI<sup>d</sup></i>					
Neuroticism			(+)		(+)
Extraversion				(+)	(-)
Openness-to-experience			(+)		
Agreeableness				(+)	(-)
Conscientiousness				(+)	
<i>Chinese Personality Assessment Inventory-2<sup>e</sup></i>					
Novelty			(+)	(+)	
Divergent thinking			(+)	(+)	
Logical vs. affective orientation				(+)	
Extraversion vs. introversion				(+)	
Optimism versus pessimism				(+)	(-)
Internal vs. external locus of control		(-)	(-)	(+)	(-)

Note: See <sup>a</sup>Leung *et al.* (2007), <sup>b</sup>Chen *et al.* (2006), <sup>c</sup>Lai *et al.* (2007), <sup>d</sup>Chen *et al.* (2006), <sup>e</sup>Chen *et al.* (2006)

## Values

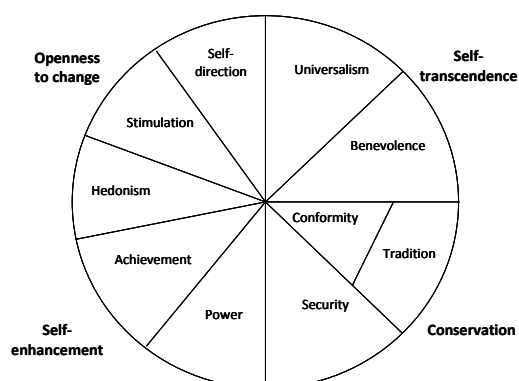
Schwartz's comprehensive programmatic approach to values is the most influential in psychology and business management research (Steenkamp & Burgess, 2002). He has refined the values concept, proposed a new theory on values contents and structure, developed new measurement scales, and produced consistently supportive results in studies of more than 200,000 subjects in over 70 countries (Schwartz *et al.*, 2001), including South Africa (e.g., Burgess, Schwartz & Blackwell, 1994; Steenkamp & Burgess, 2002). Content and structural aspects of the theory are especially useful in assessing nomological relations.

The *content* aspect of the theory identifies ten distinct and comprehensive value constructs, which are differentiated by the motivational goals each value expresses. Table 2 provides definitions of each value type in terms of its central goal and lists exemplary values. These values derive from an analysis of universal requirements with which all individuals and societies must cope. The theory provides a comprehensive and nearly universal set of motivational value types that transcend situations and relate logically to other beliefs.

**Table 2: Value types, definitions and exemplary values**

Value type	Definition	Exemplary values
Power	Social status and prestige, control or dominance over people and resources.	Social power, authority, wealth
Achievement	Personal success through demonstrating competence according to social standards.	Successful, capable, ambitious
Hedonism	Pleasure and sensuous gratification for oneself.	Pleasure, enjoying life
Stimulation	Excitement, novelty, and challenge in life.	Daring, varied life, an exciting life
Self-direction	Independent thought and action – choosing, creating, exploring.	Creativity, curious, freedom
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and nature.	Broadminded, social justice, equality, protecting the environment
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.	Helpful, honest, forgiving
Tradition	Respect, commitment, and acceptance of the customs and ideas that culture or religion provide.	Humble, devout, accepting my portion in life
Conformity	Restraints of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.	Politeness, obedient, honouring one's parents or elders
Security	Safety, harmony, and stability of society, of relationships, and of self.	Social order, clean

Source: Schwartz *et al.*, 2001



Source: Adapted from (Schwartz, *et al.* 2001)

**Figure 1: Schwartz's model of relations among motivational value types and higher-order domains**

The *structural* aspect describes the dynamic relations among the ten values. The motivational continuum gives rise to a circumplex structure (see Figure 1), which captures the notion that pursuing different values can be compatible or in conflict, depending on the proximity of values around the circumplex. The closer any two values, in either direction around the circumplex structure, the more similar their underlying motivations; the more distant any two values, the more opposed their underlying motivations. The

direction and magnitude of relations among the ten value constructs produce an integrated structure that can be summarized by two orthogonal dimensions that oppose higher-order value domains: *self-enhancement* vs. *self-transcendence* opposes power and achievement values to universalism and benevolence values; *openness to change* vs. *conservation* opposes self-direction and stimulation values to security, conformity and tradition values. Hedonism values share elements of both openness and self-enhancement. Value types and domains are convenient, fuzzy partitions on a circular motivational continuum, not discrete factors. Due to minor meaning differences across populations, some items may be located in adjacent regions and regions may emerge jointly with a theorised adjacent region or on its periphery.

Because pursuing any value has consequences that may be compatible or in conflict with the pursuit of other values, the theory provides a nomological net of relations by which the fundamental motivations of other constructs can be understood more fully (c.f. Gurtman, 1992). Any construct related to one value should have a predictable pattern of relations with other values, producing a sinusoid pattern of relations (i.e. similar to a sine curve) at the level of value types and domains. Moving along the circular structure in

either direction from where a social axiom has its most positive relations with a value (e.g., religiosity with security), relations with other values should decrease monotonically until reaching the opposite side of the circle, where the most negative relations should be found (e.g., hedonism). Leung, Bond and their associates recently studied the relations of values and social axioms in a series of papers, showing only moderate relationships between the two general constructs (see Table 1). Further details on the basis for theorised relations can be obtained from sources identified in the table note.

### Satisfaction with life

Satisfaction with life (SWL) is the cognitive component of subjective well-being. It reflects global assessments of life quality, which emerge from cognitive, judgmental assessments that people make in life (Diener, Emmons, Larsen & Griffin, 1985). More than 30 years of research indicates that SWL is a robust concept that is measured reliably across cultures (Diener, Suh, Lucas & Smith, 1999).

The growing importance of subjective well-being in business research domains is reflected in several recent calls. For example, Stiglitz, Sen and Fitoussi's (2010) argue that improving well-being, not gross domestic product, should be the focus of international business and economic policy. Diener and Seligman (2004) call for organisational, corporate and governmental policymakers to place more weight on people's evaluations and feelings. SWL is an important research focus in domains such as marketing and human resource management (Diener & Seligman, 2004; Judge, Bono, Erez & Locke, 2005; Sirgy, 2001).

Studies of Chinese university students indicate that SWL relates negatively with social cynicism and social complexity and positively with religiosity and reward for application (Chen, Cheung, Bond & Jin-Pang, 2006; Lai, Bond & Hui, 2007). These results can be explained from two perspectives. From a *social identity theory perspective*, beliefs about expected social outcomes influence behaviour (Brewer, 2007; Hogg & Terry, 2000). For example, social cynicism detrimentally affects the quality and number of social interactions, perhaps especially with out-groups, thereby increasing negative feedback and lowering self-esteem. From a *social cognition research perspective*, cognitive evaluations of outcomes in life have a self-fulfilling effect on behavioural outcomes (see Lai *et al.*, 2007). Reward for application supports persistence and hard work, producing more positive outcomes. Religiosity promotes a less confrontational approach to conflict, improving social relations, raising self-esteem, and promoting SWL.

### Optimum stimulation level

Optimum stimulation level (OSL) is a personality trait that refers to one's preference for stimulation in life (Steenkamp & Baumgartner, 1992). It arose in psychological research

investigating the effects of stimulation and arousal on learning and optimal functioning (Hebb, 1955; Leuba, 1955), but has been neglected in prior social axioms research. Several theories trace human behaviour to the mere desire to adjust stimulation to a more optimal level (e.g., Berlyne, 1960; Fiske & Maddi, 1961; Fowler, 1965).

According to OSL theories (reviewed by Steenkamp & Baumgartner, 1992; Zuckerman, 1994), people tend to prefer intermediate levels of stimulation—referred to as the optimum stimulation level in the literature—and that there are reliable individual differences in the amount of stimulation considered optimal by a person. Interactions with the social and physical environment provide opportunities for a person to raise or lower stimulation to more optimal levels for that individual. When stimulation is suboptimal, individuals may engage in exploratory behaviour, which has “the sole function of changing the stimulus field” (Berlyne, 1963:288). The reward of exploratory behaviour is intrinsic to the behaviour. Exploratory behaviour is recognised as an energizing force in competency motivation (Elliot & Dweck, 2005) and effectance motivation (White, 1959), a precondition for subjective states in which people become involved in an activity to the exclusion of all else (i.e., “in flow”, Csikszentmihalyi, Abuhamdeh & Nakamura 2005) and a central element of intrinsic motivation manifesting in a lifelong desire for exploration and mastery (Deci & Ryan, 1985).

OSL relates positively with the Big Five theory traits of extraversion and openness to experience and negatively with agreeableness and conscientiousness. It relates positively with extraversion and psychoticism in Eysenck's three-factor theory (Byman, 2005; Zuckerman, 1994; Zuckerman, Kuhlman, Teta, Joireman & Kraft, 1993) as well as openness to change values (i.e., stimulation, self-direction and hedonism), monotony avoidance, risk-taking, thrill and adventure seeking, impulsivity, curiosity, need for cognition and preferences for novelty, complexity and ambiguity in life. OSL relates negatively with conservation values (i.e., conformity, tradition, and security), risk-avoidance, premeditation, rigidity, and dogmatism (Baumgartner & Steenkamp, 1994; Roberti, 2004; Steenkamp & Baumgartner, 1995; Steenkamp & Burgess, 2002). Finally, OSL relates conceptually to SWL (Csikszentmihalyi, Abuhamdeh & Nakamura, 2005).

OSL promotes intrinsically-interesting behaviours, which increase knowledge and skills in managing the environment cumulatively and promote feelings of competence and efficacy. It is prominent in organisational behaviour and consumer behaviour research. In the organizational context, OSL predicts vocational preferences and behaviour in the workplace (reviewed by Reio & Sanders-Reio, 2006; Roberti, 2004; Zuckerman, 1994). High OSLs prefer occupations offering variation, novelty, complexity, and risk. In the consumer context, it relates to exploratory consumer behaviours, such as product acquisition and use, information processing, and brand preference, and to innovative consumer behaviour (Burgess & Harris, 1998;

Joachimsthaler & Lastovicka, 1984; McDaniel, Lim, & Mahan III, 2007; Raju, 1980; Steenkamp & Baumgartner, 1992; Steenkamp & Burgess, 2002).

## Relations of OSL and social axioms

Although OSL has not been studied previously in social axioms research, we can theorise tentatively, based on the foregoing. OSL should relate negatively with *religiosity*. High OSLs are low in religiosity and religious behaviours and unlikely to place importance on religious conformity and traditions (Steenkamp & Burgess, 2002). They attend church less often and express interest in non-traditional life philosophies (Zuckerman, 1994). Religions typically require conformity to prescribed behavioural expectations that reduce opportunities for stimulation, hedonism, and pleasure (Leung *et al.*, 2007), which is in conflict with the promptings of OSL.

*Social complexity* refers to belief in a complex view of people and social relations, as well as openness to diverse views and pluralism. It promotes premeditation and responsiveness to others in social interactions, so that own outcomes are achieved. People high in social complexity believe that human behaviour may be unpredictable and contradictory, precluding rigid rules in life and presenting multiple paths for a given outcome. Navigating this complexity requires vigilance and openness to accommodating others. OSL promotes exploration, impulsivity and disinhibition in social relations, which are motivated by the desire to regulate stimulation. A negative relation also is expected with *reward for application*, which refers to a belief that effort and hard work will be rewarded. Rewards may be contingent on the goodwill of others and require perseverance and repression of impulsivity, which conflicts with the promptings of OSL. *Social cynicism* refers to a negative view of people and social institutions. It promotes vigilance, distrust and hesitancy in social relations, which is in conflict with the extraversion, impulsivity, and openness of high OSLs. Social cynicism will thus show a negative relation with OSL.

*Fate control* is the belief that external events in life are influenced by impersonal forces (e.g., fate, luck, destiny) but that individuals can act to influence these outcomes of events. OSL can be related to both the fate and the control aspects of this dimension. Regarding the *fate* aspect, OSL and fate control relate positively to belief in the paranormal (Groth-Marnat & Pegden, 1998; Irwin, 1993; Singelis, Hubbard, Her & An, 2003; Smith, Johnson & Hathaway, 2009). Zuckerman (1994) ascribes paranormal beliefs in high OSLs to their cognitive style, which tends to emphasise broad cognitive generalization and use more complex cognitive categories. This promotes openness to including diverse phenomena under broad constructs, readiness to accept unusual ideas and certain kinds of belief outside the boundaries of conventional religion and science, and opportunities for ideation about mysterious and magical forces that high OSLs find cognitively stimulating. Regarding the *control* aspect, personal control beliefs (viz.,

locus of control, personal control, mastery, self-efficacy, see George, 2003) promote active engagement with the world to influence outcomes outside one's control (Peterson, 1999). When control beliefs are high, individuals believe personal actions can maximise good outcomes and minimise bad outcomes in life. OSL relates positively with personal control beliefs (Helm & Landschulze, 2009; Joachimsthaler & Lastovicka, 1984). This pattern of associated constructs is sufficient to expect OSL to relate positively with the control aspect of fate control.

## Sociodemographic correlates

Several studies report sociodemographic correlates of social axioms. We report social axioms for two demographic variables frequently used in South African research: Apartheid-legacy classes and the South African Advertising Research Foundation living standard measure classes (viz., LSM, South African Advertising Research Foundation, 2009).

## Methodology

### Instrument

Development of the Social Axioms Survey (SAS) began with an extensive review of more than 300 scales in the psychology literature (Leung *et al.*, 2002). Because most scales originated in Western, high-income countries, the researchers sought balance by conducting qualitative research in Hong Kong and Venezuela. Semi-structured depth interviews and content analysis of newspapers, magazines, popular songs, primary and secondary textbooks and compilations of proverbs produced a list of more than 3000 statements concerning major beliefs about health, marriage, family, politics, and religion. After categorising statements and removing near duplicates, 182 axiom statements were included in a preliminary SAS scale. Leung *et al.* (2002), administered that scale in Hong Kong and Venezuela, identifying five individual-level dimensions and 60 SAS items with good measurement properties.

In the current research, we began with focus groups and depth interviews with people in urban townships, including recent arrivals from the rural areas living in informal settlements, to assess the social axiom dimensions from an emic perspective in this context of low human development and African culture. The five social axiom dimensions emerged clearly in this research (e.g., Maku, 2006). The survey instrument includes the following scales: the SAS (25-items, Leung *et al.*, 2002, 5-point scale, "strongly disbelieve" to "strongly believe", see appendix), the *Portrait Values Questionnaire* (PVQ, 21 items measuring value priorities, Schwartz *et al.*, 2001, 6-point scale, "not at all like me" to "very much like me"), the *Shortened Change Seeker Index* (CSI, 5 items measuring OSL, (Steenkamp & Baumgartner, 1995), 6-point scale, "not at all like me" to "very much like me"), the *Satisfaction with Life Scale* (SWL, 8-items, Diener, *et al.*, 1985, 5-point scale, "strongly



disagree" to "strongly agree"), and socio demographic measures. We omit two reverse-scored items CSI items that are unreliable in South Africa (e.g., Steenkamp & Burgess, 2002; c.f. Wong, Rindfleisch, & Burroughs, 2003). Translations from English into Afrikaans, North Sotho, South Sotho, Tswana, Xhosa and Zulu applied back-translation techniques (Van de Vijver & Leung, 1997).

## Administration

Experienced interviewers from Ipsos Markinor administered the survey during in-home, face-to-face interviews in respondents' home languages. The interviewers were drawn from all major South African population groups and trained to conduct interviews in cross-cultural contexts. To reduce response bias, scales and scale items were rotated within the questionnaire between respondents and all questions included a "don't know" response option (Schwarz, Groves & Schuman, 1998). At least 20% of the respondents interviewed by each interviewer were re-contacted to verify details and confirm answers to random questions.

## Participants

The gender-balanced sample comprises 2,000 South Africans, 16 years and older, residing in the Gauteng, Durban, Pietermaritzburg, Bloemfontein, Welkom, Port Elizabeth, East London and Cape Town metropolitan areas (see Table 3). A national database of residential addresses for urban, suburban, and periurban areas was used to choose random sampling points. The sample is representative of the metropolitan adult population, including recent migrants from rural areas residing in townships and informal settlements.

We employ the procedure recommended by Schwartz (1992) to identify careless respondents (e.g., acquiescence response style or noncontingent responding, see Baumgartner & Steenkamp, 2001). Respondents providing the same response 11 or more PVQ items consecutively or 15 or more items overall are considered careless. According to these criteria, we drop 117 respondents (5.8%), which compares favourably to prior research (e.g., Steenkamp & Burgess, 2002). The effective sample size is 1883 (c.f. total sample / effective sample: Asian = 6.9% / 7.0%, Black = 65.9% / 65.3%, Coloured = 13.4% / 12.8% and White 14.4% / 14.4%). As in prior research, although those excluded were less likely to be White or have high formal education, the effect size of the association between being dropped and race or education is small (Cramer's  $V < .10$ ).

## Results

### Measurement validation

Respondents may be unwilling or unable to respond accurately, even when asked to report information falling

within their purview (Van de Vijver & Leung, 1997). Thus, item nonresponse is an important consideration in business research (Baruch & Holtom, 2008). To help reduce response bias, all questions included a "don't know" option (Schwarz, *et al.*, 1998), which was treated as missing data. For the SAS, 73% of the sample responded to all items, 85% responded to at least 24 items and missing data exceeds 5% for three questions. Missing data per question for each scale is summarised as follows: SAS mean = 0.7%, min = 0.4%, max = 6.4%; PVQ mean = 2.8%, min = 0.32%, max = 1.33%; CSI mean = 1.5%, min = 0.9%, max = 2.3%; SWL mean = 1.2%, min = 0.4%, max = 3.6%.

### Factorial structure

We assessed the fit of the theorised factorial structures to the data in two ways, omitting cases with missing data ( $n = 1373$ ). We tested the structure of the SAS, SWL and OSL scales using the confirmatory factor analysis approach (CFA, Steenkamp & Van Trijp, 1991), conducting all analyses on item covariances using maximum likelihood estimation in LISREL 8.8. Schwartz's value types represent convenient, fuzzy partitions on a circular continuum of motivations rather than discrete factors (see Figure 1), which is incompatible with CFA. Following Schwartz (1992), we assess the PVQ using the configural verification approach (Davison, 1983), which employs smallest space analysis (SSA, Guttman, 1968). SSA is a nonmetric, multidimensional scaling technique for assessing structural fit over a multidimensional space.

### SAS, SWL and CSI scales

We assessed the measurement properties of the SAS, SWL and CSI scales using CFA in the following way (c.f. Anderson & Gerbing, 1988; Fornell & Larcker, 1981; Steenkamp & Van Trijp, 1991). To assess convergent validity, we verified that item loadings were significant and substantial on intended latent variables. To assess discriminant validity, we verified that (a) correlations between the latent variables (i.e., a 95% confidence interval around the latent variable inter-correlations) did not include unity, (b) average variance extracted (AVE) exceeded the square of latent variable inter-correlations and (c) model fit indices indicated an acceptable fit (i.e.,  $RMSEA \leq 0.10$ ). Fit to the 5-factor SAS model appears acceptable (see Table 4), but close examination reveals two reverse-worded items with negative loadings on theorized latent variables and unacceptably high standardised residuals (viz., #4 "Religion makes people escape from reality" and #12 "There is usually only one way to solve a problem."). Reverse-worded items are notoriously unreliable in emerging markets research (Burgess & Steenkamp, 2006). We dropped these items, which did not affect the meaning of the relevant factors.

**Table 3: Sample characteristics**

Characteristic	Proportion	Class	Proportion
<i>Age</i>			
16 – 24 years	23,5%	45 – 54 years	15,4%
25 – 34 years	23,6%	55 – 64 years	10,2%
35 – 44 years	19,6%	65+ years	7,8%
<i>Education</i>			
No formal schooling	2,1%	<i>Post-matriculation (degree, diploma, or certificate):</i>	
Some primary school	6,4%	Professional/technical/secretarial certificate/diploma	2,5%
Primary school completed	6,4%	Technikon diploma/degree completed	6,6%
Some high school	40,7%	University degree completed	3,8%
Matric Grade 12	29,2%	Other	0,6%
Artisan's certificate obtained	1,8%		
<i>Gender</i>			
Female	49,8%	Male	50,2%
<i>Home language</i>			
Afrikaans	14,3%	Tsonga/Shangaan	2,8%
English	19,2%	Tswana	5,4%
Ndebele	0,8%	Venda	1,1%
Northern Sotho (Pedi)	5,3%	Xhosa	17,0%
Southern Sotho (seSotho)	9,6%	Zulu	23,1%
Swazi	0,6%	Other	0,7%
<i>SAARF-LSM class</i>			
LSM2	1,1%	LSM7	12,0%
LSM3	5,8%	LSM8	8,1%
LSM4	9,5%	LSM9	8,4%
LSM5	17,7%	LSM10	11,4%
LSM6	26,0%		
<i>Marital status</i>			
Single	43,3%	Married	38,1%
Living together	8,4%	Separated, divorced or widowed	10,2%
<i>Apartheid-legacy classes</i>			
Black	65,3%	Indian	7,0%
Coloured	12,8%	White	14,4%

**Table 4: Summary of fit for models subjected to confirmatory factor analysis**

Model description	$\chi^2$ (d.f.)	GFI	TLI	CFI	RMSEA	ECVI	90% C.I.
<i>Five-factors SAS scale, listwise deletion (n=1373)</i>							
SAS (25 items)	1980,85 (265)	0,90	0,82	0,84	0,069	1,25	1,15, 1,36
SAS (23 items, drop items #4 and #12)	1495,49 (220)	0,91	0,84	0,86	0,065	1,17	1,09; 1,26
<i>Seven factors Five factor SAS scale, OSL and SWL, imputed missing data (n=1883)</i>							
SAS (23 items), OSL and SWL	3374,12 (573)	0,91	0,89	0,90	0,051	1,89	1,80, 1,99

Note: GFI = Goodness of Fit Index, TLI = Tucker Lewis Index, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error Approximation, ECVI = Expected Cross Validation Index, 90% C.I. = 90% confidence interval of ECVI estimate.  $p < ,01$  for all chi-square statistics.

Results for the 23-item model are good. Loadings on intended factors are substantial and significant (t-statistics > 7,5). Eleven of 23 factor loadings exceed ,50 and only five are below ,40 (i.e., #7, 0,38; #8, 0,37; #13, 0,28; #16, 0,30; #19, 0,36). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) are below the arbitrary convention of 0,90, but model complexity affects incremental fit indices and the results compare to models with similar complexity (see Baumgartner & Steenkamp, 1996:126). Root Mean Square Error Approximation (RMSEA, 0,065) and the Goodness of Fit Index (GFI) exceed 0,90, indicating a reasonable fit to the data and supporting convergent validity (Browne & Cudeck, 1992). Discriminant validity is supported. Only two completely standardized, pairwise latent factor correlations exceed ,50. The maximum latent variable inter-correlation (viz., reward for application and religiosity) is ,77 and no 95% confidence interval includes unity. AVE is lower than we would like, but exceeds all squared latent factor relations. Religiosity (,57) and social complexity (,44) have composite reliabilities below generally accepted levels of ,60 and ,50, respectively. However, there are calls for more liberal assessments in emerging markets business research (see Burgess & Steenkamp, 2006). For example, in a study of market orientation in Vietnam, Deshpandé and Farley (1999) accept two factors with composite reliabilities below 40. It is in this spirit that Nunnally and Bernstein (1994) recommend lower composite reliabilities be accepted in the early stages of research.

Results for SWL, CSI and a combined model indicate acceptable model fit, convergent and discriminant validity, and good composite reliabilities. A 7-factor, CFA model (i.e., five SAS factors, SWL and CSI) shows a close fit to the data, with the RMSEA 90% confidence interval (0,049 – 0,052) and GFI and CFI exceeding 0,90. The CFA and SSA results thus support the use of the SAS, PVQ, SWL and CSI scales in South Africa.

### PVQ scale

To assess fit, we partition the multidimensional space into contiguous regions to compare the configuration to the theorised structure and examine stress (a fit index (Kruskal, 1964)). All SSAs are conducted on Pearson inter-item correlations using Statistica 9. The fit of the theorised, two-dimensional, PVQ circular structure to the data is acceptable (stress = 0.17). Only four items were positioned outside the theorised region, three of them emerging in an adjacent region. Benevolence-universalism, stimulation-hedonism, and conformity-tradition emerged in joint regions. Merged regions are consistent with the theory. Security emerges in the self-transcendence domain, a peculiarity observed consistently in African research, suggesting that Africans associate security more with equality and justice than maintaining the status quo, as social, political, and economic transition continues (see discussion in Schwartz *et al.*, 2001).

## Sociodemographic characteristics and social axioms

If social axioms are to help advance business research, then it is important that they help explain cultural variations that are not detected by traditional measures. To assess the effects of sociodemographic characteristics on an individual's social axioms, we regressed social axioms on respondent age (years), formal education (years), gender, monthly household income (Rand '000s) and marital status (single/divorced vs. other), using OLS regression. As people learn social axioms from early childhood and through institutions that were separated historically, we report results separately for the traditional four Apartheid legacy classes.

The results show that sociodemographics have a modest effect on social axioms (see Table 5). The mean  $R^2$  for the 20 models is only ,046, with  $R^2$  means for reward for application (0,060) and social cynicism (0,033) being largest and smallest, respectively. Only 6 of 20 coefficients of determination and 21 of 100 regression coefficients are statistically-significant at  $p \leq ,10$ . The only consistently observed effect is the negative effect of monthly household income on fate control but even that effect is modest: every R10,000 increase relates to a decline of only 0,06 to 0,12 on the 5-point scale for fate control. Overall, the results suggest that sociodemographics reveal little about a person's social axioms.

## Associations with values, life satisfaction and optimum stimulation level

As noted earlier, the relations of social axioms and other generalised psychological constructs are not straightforward. At this early stage, research seeks to assess overlap with other constructs and expand the nomological network of social axioms. Schwartz argues that values and other psychological constructs should have a sinusoid pattern of relations that reveals insights into the underlying motives of the construct. However, the mechanisms linking generalised cognitions and motives are not well understood. Goal congruence and affiliation, value-directed (or trait-directed) experience or common cause mechanisms may explain the modest relations with values, personality traits and life satisfaction observed in prior research (see Leung & Zhou, 2008).

In the current research, our goal is to report our empirical results to assist in this work. Table 6 summarises the results of correlation analyses conducted to assess the relations of the SAS with values, SWL, and OSL in the four subsamples. As recommended by Schwartz (1992), to account for individual differences in scale use Pearson correlations are partialled on each the mean rating of PVQ scale items (see also Fischer, 2004; Sagiv & Schwartz, 2000). To reduce bias in parameter estimates (Little & Rubin, 2002; Schafer, 2002), we impute missing values using the multiple imputation procedure in LISREL 8.8.

**Table 5: Effects of sociodemographics**

	Apartheid legacy classes			
	Asian	Black	Coloured	White
<u>Religiosity</u>				
Age (years)	<b>0,010</b>	-0,001	<b>0,005</b>	0,001
Education (years)	0,019	0,000	0,013	0,010
Gender (female)	-0,094	0,069	-0,014	0,128
Monthly household income (R'000)	0,020	0,001	-0,005	0,000
Marital status (single or divorced)	0,141	-0,071	-0,049	-0,031
Intercept	<b>3,379</b>	<b>3,763</b>	<b>3,612</b>	<b>3,421</b>
R <sup>2</sup>	0,083	0,006	0,038	0,017
<u>Fate control</u>				
Age (years)	0,005	0,000	0,004	-0,002
Education (years)	0,053	0,001	0,000	0,031
Gender (female)	0,219	<b>0,088</b>	-0,006	0,109
Monthly household income (R'000)	<b>-0,012</b>	-0,006	<b>-0,011</b>	-0,006
Marital status (single or divorced)	-0,146	0,078	0,044	0,118
Intercept	<b>2,426</b>	<b>3,572</b>	<b>3,093</b>	<b>2,785</b>
R <sup>2</sup>	0,086	<b>0,014</b>	0,034	0,027
<u>Social complexity</u>				
Age (years)	0,004	0,001	-0,002	0,000
Education (years)	<b>0,046</b>	0,005	0,008	0,006
Gender (female)	0,023	0,011	-0,084	0,000
Monthly household income (R'000)	0,005	<b>0,006</b>	0,000	<b>0,004</b>
Marital status (single or divorced)	-0,005	0,027	-0,012	<b>-0,178</b>
Intercept	<b>2,876</b>	<b>3,450</b>	<b>3,747</b>	<b>3,569</b>
R <sup>2</sup>	0,091	0,011	0,019	<b>0,070</b>
<u>Reward for Application</u>				
Age (years)	0,003	0,001	0,002	-0,001
Education (years)	<b>0,053</b>	0,011	-0,001	0,019
Gender (female)	-0,143	-0,027	-0,017	-0,007
Monthly household income (R'000)	0,005	<b>0,006</b>	-0,005	0,000
Marital status (single or divorced)		-0,073	-0,110	-0,069
Intercept	<b>3,537</b>	<b>4,037</b>	<b>4,264</b>	<b>3,840</b>
R <sup>2</sup>	<b>0,173</b>	<b>0,017</b>	0,038	0,010
<u>Social cynicism</u>				
Age (years)	0,001	-0,001	0,005	0,002
Education (years)	0,033	0,004	-0,015	-0,002
Gender (female)	-0,047	-0,010	-0,021	-0,088
Monthly household income (R'000)	-0,009	-0,005	-0,004	-0,002
Marital status (single or divorced)	-0,091	-0,090	0,025	<b>0,315</b>
Intercept	<b>3,400</b>	<b>3,809</b>	<b>3,767</b>	<b>3,532</b>
R <sup>2</sup>	0,042	0,006	0,029	0,056

Note: Reported are unstandardised regression coefficients. The following notation applies to all tables, **Bold** typeface =  $p \leq ,01$ , **Bold italic** typeface =  $p \leq ,05$ .

Table 6 : Psychological correlates of social axioms

Value types	Religiosity				Fate Control				Social complexity				Reward for Application				Social cynicism							
	A		B		C		W		A		B		C		W		A		B		C		White	
	A	B	C	W	A	B	C	W	A	B	C	W	A	B	C	W	A	B	C	W	A	B	C	White
Self-direction	0.077	-0.023	0.011	-0.034	-0.011	-0.077	-0.030	-0.068	0.073	0.036	0.039	0.102	0.256	0.048	0.044	0.225	0.021	0.015	-0.076	0.101				
Stimulation	-0.147	-0.135	-0.121	-0.147	-0.238	0.055	0.093	0.197	-0.087	-0.096	-0.013	-0.105	-0.216	-0.144	-0.092	-0.077	-0.071	-0.088	0.030	0.017				
Hedonism	-0.197	-0.180	-0.175	-0.082	0.212	0.079	0.071	0.315	-0.149	-0.083	0.016	-0.094	-0.232	-0.122	-0.052	-0.140	0.109	-0.041	-0.001	-0.045				
Achievement	-0.023	-0.086	-0.115	-0.081	0.214	-0.067	-0.031	-0.006	-0.100	-0.073	-0.120	-0.095	0.174	-0.005	-0.068	-0.118	0.101	-0.017	0.053	0.025				
Power	-0.118	-0.094	-0.072	-0.128	-0.037	0.107	-0.037	0.145	0.019	-0.131	-0.073	-0.068	0.068	-0.064	-0.049	0.046	0.064	-0.040	0.008	0.043				
Security	-0.010	0.113	0.100	0.151	-0.061	-0.029	0.001	-0.072	-0.158	0.062	0.070	-0.058	-0.075	0.072	0.150	0.171	-0.006	0.056	-0.059	0.055				
Tradition	0.049	0.188	0.099	0.030	0.014	-0.082	-0.190	-0.200	0.179	0.075	-0.009	0.109	0.052	0.143	-0.022	0.052	-0.086	0.066	0.071	-0.073				
Conformity	0.090	0.097	0.097	0.143	0.035	-0.028	0.164	-0.071	0.010	0.132	-0.015	-0.037	-0.134	0.046	0.079	-0.144	-0.146	0.057	0.080	-0.146				
Universalism	0.367	0.151	0.180	0.119	-0.098	-0.010	-0.111	-0.226	0.278	0.114	0.103	0.131	0.178	0.087	0.039	-0.023	-0.089	0.050	0.000	-0.017				
Benevolence	0.033	0.044	0.107	0.043	0.002	-0.021	0.010	-0.135	0.026	0.001	0.033	0.179	0.087	0.015	0.006	0.137	0.093	-0.016	-0.140	0.110				
Value domains																								
Conservation	0.066	0.223	0.153	0.189	-0.013	-0.078	0.002	-0.188	0.001	0.152	0.026	0.001	-0.089	0.145	0.115	0.044	-0.125	0.101	0.044	-0.091				
Self-enhancement	-0.102	-0.125	-0.120	-0.137	0.109	0.041	-0.045	0.093	-0.050	-0.147	-0.124	-0.105	0.162	-0.053	-0.076	-0.044	0.112	-0.042	0.037	0.044				
Openness to change	-0.077	-0.130	-0.090	-0.139	-0.205	0.002	0.056	0.115	-0.029	-0.062	0.015	-0.020	-0.029	-0.095	-0.046	0.079	-0.046	-0.066	-0.024	0.077				
Self-transcendence	0.256	0.135	0.173	0.101	-0.061	-0.023	-0.058	-0.226	0.194	0.077	0.081	0.196	0.174	0.070	0.026	0.074	0.010	0.021	-0.092	0.060				
Optimum stimulation level	-0.078	-0.141	-0.026	-0.164	-0.129	0.089	0.073	0.158	-0.278	-0.081	0.037	-0.086	-0.041	-0.135	0.034	0.063	0.033	-0.062	-0.048	-0.001				

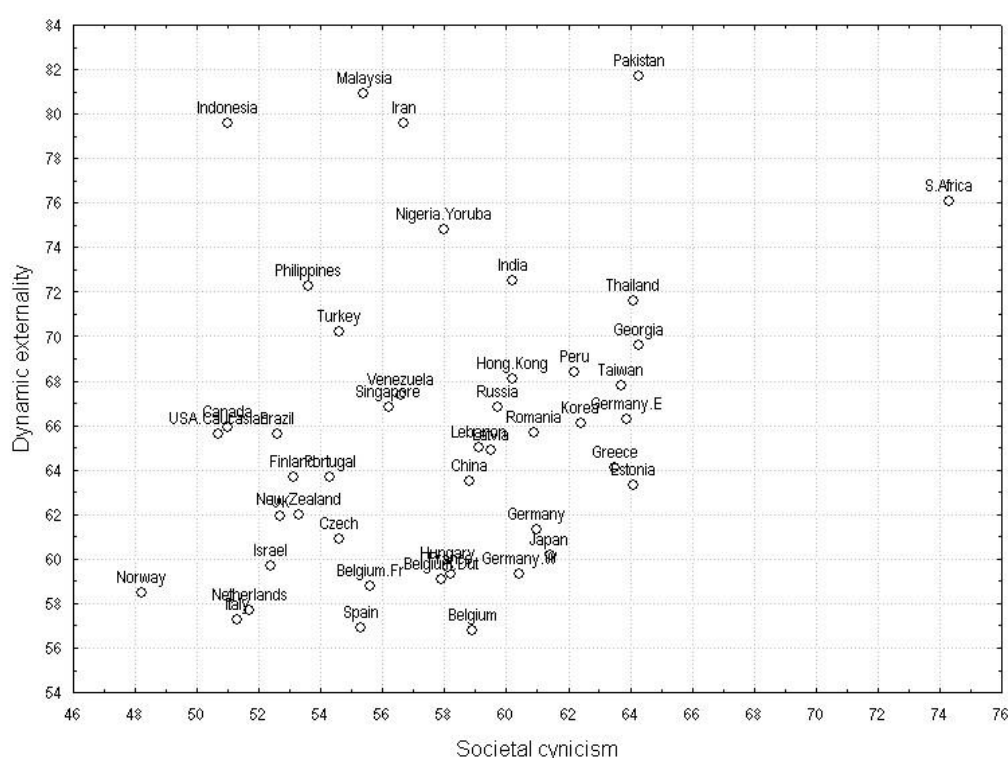
Note: A = Asians, B = Blacks, C = Coloureds and W = Whites. Reported are Pearson correlations, which are partialled for mean rating across PVQ scale.

In reporting the results, we use Cohen's classification of correlation coefficient effect sizes as small, medium and large (viz. 0,10, 0,30 and 0,50, see Rosenthal & Rosnow, 2008). For value types, only 69 of 200 effects exceed 0,10 and only 2 exceed 0,30. The positive correlation of universalism with fate control and social complexity are the only significant results observed in three of the four subsamples. At the level of value domains, only 31 of 80 effects are small and only 24 are statistically-significant. A sinusoid pattern of significant relations does not emerge consistently across the four subsamples. For OSL, only 6 of 20 effects are small and 9 are statistically-significant. These results provide further evidence that social axioms tap a different underlying psychological construct than values or traits.

## SAS Dimension Scores

### Nation-level dimensions

We report results for nation-level social axiom dimensions as mean scores and rescaled means. Following Leung and Bond (Bond, Leung, Au, Tong, De Carrasquel, et al., 2004), we rescaled mean scores, multiplying by 20 to produce a national index on the scale 0 – 100. We find that societal cynicism (mean = 3,71, std. dev. = 0,62, nation index = 74,3) is higher than any result reported to date (index mean = 57,5, std. dev. 4,5 for 40 other nations). Dynamic externality (mean = 3,80, std. dev. = 0,39, index = 76,1) is fifth highest among reported results (index mean = 65,6, std. dev. = 6,5 for 40 other nations).



Note: Results for the present research are plotted with scores reported by Bond, Leung et al. (2004), see text.

**Figure 2: Scatterplot of nations as a function of their dynamic externality and societal cynicism**

Strictly speaking, these results are not directly comparable to scores from other countries, because our sample is not limited to university students. However, results for subsamples comprising high school graduates aged 17 – 27 years (societal cynicism mean = 3,61, std. dev. = 0,60, index = 72,3; dynamic externality mean = 3,72, std. dev. = 0,47, index = 74,4) and graduates of two and four-year university programmes aged 30 years or less (societal cynicism mean = 3,69, std. dev. = 0,59, index = 73,9; dynamic externality

mean = 3,75, std. dev. = 0,48, index = 75,1) present only small departures from the national scores.

Individual-level dimensions. Tables 7 and 8 summarise the results for the total sample and subsamples on the SAS individual level dimensions, PVQ, SWL and OSL. For the total sample, endorsement of social axioms is highest for reward for application and religiosity. Social complexity, social cynicism, and fate control follow in rank order.

**Table 7: Social axioms, values, satisfaction with life and OSL for total sample and apartheid-legacy classes**

	Composite		Total		Asian		Black		Coloured		White	
	reliability	AVE <sup>a</sup>	M	S.D	M	S.D	M	S.D	M	S.D	M	S.D
<u>Social axioms</u>												
Religiosity	0,57	0,26	3,97	0,62	4,24	0,53	3,96	0,62	4,07	0,58	3,84	0,65
Fate control	0,62	0,25	3,38	0,66	3,19	0,68	3,52	0,59	3,17	0,70	3,03	0,72
Social complexity	0,44	0,17	3,79	0,50	3,79	0,51	3,76	0,51	3,89	0,44	3,88	0,45
Reward for application	0,60	0,23	4,15	0,50	4,20	0,43	4,14	0,50	4,23	0,45	4,06	0,55
Social cynicism	0,64	0,28	3,71	0,62	3,63	0,60	3,75	0,61	3,78	0,63	3,54	0,66
<u>Value types</u>												
Self-direction			4,71	0,92	4,60	0,98	4,69	0,92	4,82	0,86	4,83	0,93
Stimulation			3,98	1,16	3,80	1,43	4,04	1,14	4,00	1,20	3,80	1,10
Hedonism			4,05	1,18	3,40	1,32	4,17	1,13	4,03	1,21	3,87	1,18
Achievement			4,56	1,02	4,39	1,13	4,64	0,97	4,46	1,02	4,36	1,15
Power			4,09	1,06	3,73	1,01	4,27	1,03	3,67	1,09	3,84	1,01
Security			4,93	0,91	5,08	0,78	4,85	0,94	5,14	0,78	5,01	0,90
Tradition			4,53	0,96	4,84	0,76	4,55	0,96	4,59	0,95	4,23	0,98
Conformity			4,58	0,94	4,40	0,92	4,59	0,92	4,78	0,94	4,44	1,02
Universalism			4,53	0,91	4,62	0,87	4,45	0,91	4,74	0,81	4,69	0,97
Benevolence			4,69	0,88	4,76	0,80	4,63	0,89	4,94	0,78	4,71	0,89
<u>Value domains</u>												
Openness to change			4,35	0,85	4,20	1,05	4,36	0,83	4,41	0,85	4,32	0,85
Self-enhancement			4,33	0,89	4,06	0,91	4,45	0,85	4,06	0,88	4,10	0,95
Conservation			4,55	0,79	4,62	0,65	4,57	0,79	4,68	0,78	4,34	0,84
Self-transcendence			4,72	0,71	4,82	0,64	4,64	0,72	4,94	0,62	4,81	0,75
<u>Other</u>												
Satisfaction with life	0,77	0,33	3,46	0,65	3,50	0,68	3,37	0,65	3,55	0,61	3,77	0,54
Optimum stimulation level	0,84	0,51	3,85	1,06	3,45	1,31	3,93	1,01	3,83	1,08	3,70	1,14

Note: <sup>a</sup>AVE = Average variance extracted.

### Within-nation comparisons

Tables 7 and 8 also facilitate comparisons of mean social axioms endorsement across Apartheid-legacy and LSM classes. Our sample did not include the LSM 1 class, which is rarely found in major metropolitan areas anymore. To assess mean differences, we conducted analyses of variance for each dimension across the two types of classes (i.e., 10 tests). With the exception of religiosity across LSM classes, the results are significant (i.e.,  $p_F \leq .001$ ). The mean differences reveal interesting patterns of social axiom endorsement. Social complexity increases with living standard. Reward for application and religiosity decline until LSM class 4, rising in LSM classes 8 and 9 before abruptly declining in LSM class 10. Fate control and social cynicism peak in middle LSM classes and then decrease as living standards rise. Black South Africans are highest on fate control, approximately half a scale point above Whites, who score the lowest of all groups.

### Between-nations comparisons

As noted earlier, scores are not directly comparable to other countries (see Bond & Leung, 2009). However, in the current research, similar results were obtained for high

school graduates aged 17 – 27 years and graduates of two and four-year university programmes aged 30 years or less. Thus, drawing comparisons with caution, we comment briefly on our results. South Africans appear to exhibit extreme social axiom scores. Scores for social cynicism and fate control are higher than scores in 41 nations studied previously. Reward for application is surpassed only by Malaysians and Indians. Only Pakistanis, Malaysians, Indonesians, and Iranians score higher on religiosity. South Africans are lower on social complexity than all citizens except Peruvians, Romanians, Pakistanis, and Iranians. This pattern of extreme scores is similar to the pattern in other emerging markets.

### Incremental Validity of Social Axioms

To illustrate the added predictive value of social axioms, we assessed effects on SWL in a hierarchical regression model. Three blocks of variables were entered sequentially, beginning with the control variables (see Table 9). We included gender (female) and Apartheid legacy class (Asian, Coloured, and White) in the model as dummy variables, which are interpreted as reflecting deviations from the omitted variables (respectively, male and Black). The results show that sociodemographics account for 13,2% of the variance in SWL.

**Table 8: Social axioms, values, satisfaction with life and OSL for total sample and SAARF LSM classes**

Individual difference	LSM 2		LSM 3		LSM 4		LSM 5		LSM 6		LSM 7		LSM 8		LSM 9		LSM 10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<u>Social axioms</u>																		
Religiosity	4,05	0,63	3,98	0,65	3,94	0,63	4,00	0,62	3,97	0,60	3,93	0,62	4,02	0,63	4,05	0,53	3,90	0,70
Fate control	3,39	0,42	3,52	0,54	3,48	0,58	3,54	0,62	3,45	0,65	3,35	0,64	3,28	0,74	3,18	0,66	3,06	0,73
Social complexity	3,61	0,41	3,72	0,58	3,66	0,55	3,79	0,48	3,77	0,49	3,80	0,49	3,86	0,50	3,89	0,47	3,91	0,44
Reward for application	4,18	0,49	4,08	0,54	4,04	0,52	4,14	0,53	4,15	0,46	4,22	0,49	4,21	0,48	4,21	0,45	4,09	0,54
Social cynicism	3,88	0,66	3,73	0,63	3,75	0,60	3,76	0,61	3,75	0,60	3,77	0,59	3,67	0,63	3,62	0,65	3,55	0,68
<u>Value types</u>																		
Self-direction	4,50	0,78	4,51	1,01	4,48	0,97	4,67	0,92	4,68	0,90	4,82	0,91	4,77	0,98	4,91	0,82	4,93	0,88
Stimulation	3,50	1,21	3,78	1,12	3,86	1,20	4,08	1,20	3,89	1,14	4,09	1,13	4,18	1,23	4,03	1,11	4,00	1,13
Hedonism	3,75	1,29	4,08	1,15	3,94	1,17	4,02	1,19	4,09	1,18	4,05	1,23	4,15	1,18	4,05	1,19	4,06	1,13
Achievement	4,53	0,90	4,48	1,08	4,50	1,10	4,62	0,98	4,56	0,98	4,57	0,98	4,46	1,06	4,60	1,04	4,59	1,07
Power	3,90	0,87	4,18	1,05	4,19	1,04	4,24	1,05	4,14	1,08	3,90	1,08	4,03	1,11	4,00	1,01	3,95	1,03
Security	4,85	1,20	4,73	0,93	4,78	1,02	4,92	0,93	4,85	0,92	4,98	0,86	4,92	0,95	5,18	0,75	5,11	0,79
Tradition	4,05	1,09	4,50	0,95	4,49	1,00	4,59	0,96	4,55	0,93	4,58	0,98	4,53	0,98	4,58	0,99	4,41	0,91
Conformity	4,47	1,01	4,55	1,00	4,57	1,05	4,60	0,91	4,65	0,88	4,56	0,93	4,50	0,98	4,61	0,92	4,50	1,02
Universalism	4,13	0,99	4,35	1,01	4,46	0,92	4,49	0,91	4,46	0,88	4,55	0,91	4,60	0,89	4,69	0,90	4,79	0,85
Benevolence	4,15	0,96	4,58	0,90	4,54	0,93	4,59	0,87	4,68	0,86	4,75	0,90	4,74	0,94	4,86	0,81	4,87	0,75
<u>Value domains</u>																		
Openness to change	4,04	0,78	4,14	0,88	4,17	0,83	4,37	0,88	4,28	0,84	4,45	0,81	4,47	0,90	4,47	0,83	4,47	0,83
Self-enhancement	4,21	0,74	4,33	0,93	4,34	0,89	4,43	0,85	4,35	0,88	4,24	0,88	4,25	0,92	4,30	0,87	4,26	0,93
Conservation	4,23	0,94	4,53	0,83	4,53	0,84	4,60	0,79	4,59	0,75	4,57	0,81	4,51	0,82	4,59	0,81	4,46	0,78
Self-transcendence	4,38	0,89	4,55	0,76	4,59	0,77	4,67	0,68	4,66	0,70	4,76	0,72	4,75	0,74	4,91	0,63	4,92	0,65
<u>Other</u>																		
Satisfaction with life	2,71	0,66	3,12	0,64	3,08	0,69	3,39	0,65	3,43	0,62	3,51	0,56	3,59	0,55	3,70	0,49	3,88	0,54
Optimum stimulation level	3,17	0,87	3,75	1,10	3,64	0,98	3,91	1,07	3,86	1,05	3,89	1,03	3,98	1,13	3,81	1,11	3,88	1,09



**Table 9: Hierarchical regression of life satisfaction on other variables**

Predictor	Model 1	Model 2	Model 3
Intercept	2,763	1,944	1,378
Age (years)	,004	,004	,004
Education (years)	,040	,035	,034
Gender (female)	,026	,033	,022
Monthly household income (R'000)	,010	,009	,009
Marital status (single or divorced)	,037	,034	,046
Asian	,012	,056	,074
Coloured	,129	,126	,156
White	,120	,163	,214
PVQ domain sum: Resultant self-transcendence		,007	-,001
PVQ domain sum: Resultant conservation		,004	-,001
Mean rating across the 21 PVQ items		,140	,088
Optimum stimulation level		,055	,050
SAS Religiosity			,057
SAS Fate control			,110
SAS Social complexity			,063
SAS Reward for application			,091
SAS Social cynicism			-,099
R <sup>2</sup>	,163	0,159	0,181
R <sup>2</sup> change	--	0,034	0,025

Note: Reported are unstandardised regression coefficients.

Values and OSL were added in the second block. The inter-relations of the values types, according to the theory, present a multicollinearity problem in linear regression. Multicollinearity can be avoided by working at the level of value domains, which present two orthogonal dimensions (see Steenkamp & Burgess, 2002). We thus subtracted self-enhancement from self-transcendence (i.e., *resultant self-transcendence*) and openness-to-change from conservation (i.e., *resultant conservation*). We also entered the mean rating across all PVQ scale items into the analysis to account for scale-use bias. The results show that resultant self-transcendence and resultant conservation do not relate significantly to SWL after accounting for mean scale rating and sociodemographics. OSL has a small and significant effect. Entering the second block into the model significantly improves R<sup>2</sup>, which increases 26% over the Block 1 model.

The final block comprises the five individual-level social axioms. Social axioms have significant effects on SWL, which are in the expected direction except for social complexity. The effects are positive except for social cynicism, which relates negatively to SWL as expected. The unexpected positive relations of social complexity and SWL, while modest, suggest that life satisfaction is higher among South Africans who anticipate behavioural inconsistencies and explore appropriate ways to achieve outcomes in South Africa's diverse social context. When the block of social axiom variables is entered, R<sup>2</sup> is 22% higher than the model including sociodemographics, values and OSL.

Taken together, the results of the hierarchical regressions are consistent with prior findings showing that social axioms have predictive value over and above sociodemographics, values and personality.

## Discussion

"Periods of fundamental social and political change always highlight, and make explicit, relations and linkages which in other times are more assumed and implicit. The social obligations accompanying rights are often more pronounced in such times of transformation. Such is the case now."

Nelson Rolihlahla Mandela 1918

In a rapidly-changing world in which social demands are growing, culture stands as an enduring influence on business success. Research on human beliefs continues to provide a treasure-trove of findings. Its first impetus came from Rokeach's seminal integration of work across the behavioural sciences and proposal of the first rigorous theory on the content and nature of values. Soon afterward, Hofstede, Inglehart and others began exploring the values of nations. Most recently, Schwartz refined Rokeach's values construct, proposed the first integrated theories on value contents and structure, designed multiple instruments to test his theories on values at the level of individuals and nations, and orchestrated research providing consistently supportive results in more than 70 countries—a feat that must be recognised as one of the most impressive programmatic approaches to the study of any construct in the history of psychology. Business researchers will continue to borrow extensively from this corpus of values research and to mine its future advances for new insights. However, further advancement of cross-cultural business research demands that we also "broaden the net" to include new culture constructs that help explain cultural variations not detected by values.

Perhaps the most important criteria for new culture constructs are that they help explain variations across culture and provide new insights into the relations of traditional constructs. Few would dispute that people with

the same values would behave differently, if they differ in beliefs about the social world and its influence on behavioural outcomes in a particular situation. In orchestrating their large-scale programmatic research, Leung and Bond remind us that the traditional focus on “beliefs as motives” in values research is insufficient, in that it neglects potentially important new insights obtainable from research on “beliefs as cognitions”. Our findings support this notion. We find that social axioms have weak relations with sociodemographics and values that generally are consistent in size and direction with prior research. We observe expected relations with OSL. We find compelling evidence that social axioms add predictive value over and above these other variables in predicting SWL. Considered as a whole, these findings are very encouraging.

Many avenues are available for fruitful South African business research. It is important that we study more representative emerging markets samples. University student samples are useful in the early stages of theory building across cultures but unlikely to improve our understanding in emerging markets. Business research can play an important role and contribute to other disciplines by grounding interesting research questions in individual, group and organisational contexts that reflect the diversity of life in emerging markets. Research in which individual- and nation-level relations are estimated simultaneously in multilevel and multigroup models may be particularly informative (Bijmolt, Paas, & Vermunt, 2004; Cheung, Leung & Au, 2006; Fischer, 2008).

While the main effects of social axioms, values and personality will continue to be explored, it is important to shift our focus to the systematic exploration of mediation and moderation effects. In respect of South African social axioms, research should focus on the apparently high endorsement of social cynicism and fate control. Although South Africans endorse fate control and reward for application less than other social axioms, they are relatively high on these dimensions when compared to university students in other nations. We need to know more about how perceived turbulence in socioeconomic, cultural, and regulating institutions affects social axiom endorsement and its behavioural consequences. Grounding such questions in consumer or organisational contexts will lead to interesting and important new insights.

Clearly, we have much to learn about the relations of generalised beliefs and other psychological and cultural constructs. It's not clear why social complexity has positive relations with SWL in South Africa but negative relations elsewhere. Is complexity more beneficial here due to rapid transformation of socioeconomic and regulative institutions? Does social complexity lead to more appropriate expectations and behaviours that lead to higher citizen SWL in societies in transition? Do people transiting from rural, feudal lifestyles to modern consumer lifestyles, in the span of a generation, negotiate or perceive social complexity differently to those not undergoing such rapid transition in the same country?

The patterns of relations between social axioms, values and personality better. Concerning values, achievement and reward for application have much weaker relations than expected. This may suggest that achievement goals require not only effort, knowledge, and careful planning but also multiple or other means, such as social networks. Fate control has its highest negative relations with security and highest positive relations with hedonism and power, suggesting that it may play a role in augmenting perceptions of security and control in societies undergoing rapid transformation. Concerning personality, research on social axioms and the Big Five personality traits (McCrae, 2000) is needed in South Africa. Researchers also need to study relations with specific personality traits of interest in business research. Our findings suggest that OSL is one such trait.

In the current research, we tested the SAS in a large national metropolitan sample reflecting considerable diversity in age, formal education and living standards, as is found typically in emerging markets. More than half of the sample did not complete high school and 15% studied no further than primary school, suggesting literacy and numeracy constraints. This presents a stiff test for any scale, as measurement validation shows for other oft-validated scales in our study. Our results further substantiate the convergent, discriminant and nomological validity of the SAS. Composite reliabilities are acceptable at this stage but lower than we would like, which is not unexpected in an emerging market test of a new scale. Efforts by Leung, Bond and their collaborators to refine the SAS should continue (e.g. Leung *et al.*, in press).

Leung and Bond's theory on social axioms is a promising avenue for scholarly and practical research on the role of cognitions as elements of human belief systems influencing behaviour in contexts that interest business researchers and practitioners. South Africa's importance as an emerging market, diversity in institutional contexts and extreme social axiom emphases at the nation and individual levels make it hard to think of a more compelling context for business research on social axioms.

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Table A.1

*The 25-item Social Axioms Survey*

Item	Content
1.	Religious faith contributes to good mental health.
2.	Good luck follows if one survives a disaster.
3.	Human behaviour changes with the social context.
4.	Religion makes people escape from reality
5.	People may have opposite behaviour on different occasions.
6.	Fate determines one's successes and failures.
7.	There is a supreme being controlling the universe.
8.	One who does not know how to plan his or her future will eventually fail.
9.	Individual characteristics, such as appearance and birthday, affect one's fate.
10.	Adversity can be overcome by effort.
11.	Every problem has a solution.
12.	There is usually only one way to solve a problem.
13.	One's behaviour may be contrary to his or her true feelings.
14.	There are certain things we can do to help us improve our luck and avoid unlucky things.
15.	One will succeed if he/she really tries.
16.	Current losses are not necessarily bad for one's long-term future.
17.	Power and status make people arrogant.
18.	Powerful people tend to exploit others.
19.	People will stop working hard after they have secured a comfortable life.
20.	Beliefs in a religion help one understand the meaning of life.
21.	Kind-hearted people are easily bullied.
22.	Beliefs in a religion make people good citizens.
23.	Kind-hearted people usually suffer losses.
24.	There are many ways for people to predict what will happen in the future.
25.	Hard working people will achieve more in the end.