

CONNECTING POVERTY TO PURCHASE IN INFORMAL MARKETS

TED LONDON,^{1,2*} HEATHER ESPER,¹ ANDREW GROGAN-KAYLOR,³ and GEOFFREY M. KISTRUCK⁴

¹William Davidson Institute, University of Michigan, Ann Arbor, Michigan, U.S.A.

²Ross School of Business, University of Michigan, Ann Arbor, Michigan, U.S.A.

³School of Social Work, University of Michigan, Ann Arbor, Michigan, U.S.A.

⁴Schulich School of Business, York University, Toronto, Canada

Base-of-the-Pyramid (BoP) enterprises seek to serve impoverished customers in informal markets. While BoP enterprises have grown in prominence, comparatively little multidimensional theoretical work has explored why these customers ultimately elect to purchase their products. Using a sample of 555 potential customers in rural India, our results indicate that the influence of different dimensions of poverty on likelihood of purchase is largely a function of the strength of the formal institutional environment. Specifically, stronger formal institutional environments can act as both a complement to, and a substitute for, the influence of individual- and network-level norms on purchasing decisions in informal markets. Copyright © 2014 Strategic Management Society.

INTRODUCTION

Base-of-the-Pyramid (BoP) enterprises are organizations that seek to be economically sustainable and contribute to alleviating poverty by creating new transactional linkages between formal and informal markets (Godfrey, 2011; Kistruck *et al.*, 2012a; London, Anupindi, and Sheth, 2010; London and Hart, 2011). We define informal markets as markets where transactions are largely guided by norms, values, and tradition rather than formal rules and laws (London and Hart, 2004; Mair, Marti, and Ventresca, 2012; Webb *et al.*, 2012). BoP enterprises often accomplish this dual mission by introducing lower priced or previously unavailable products and services to impoverished individuals within informal markets (Prahalad, 2005). For example, Sanergy is a BoP enterprise based in Kenya that provides

low-cost sanitation services to people living in urban slums who lack affordable access to clean toilets (Esper, London, and Kanchwala, 2013). Sanergy's objective is to help decrease the nearly 1.7 million deaths that occur each year worldwide as a result of diseases associated with improper sanitation (Sanergy, 2013). To accomplish this, Sanergy seeks to generate sufficient profits from the sale of its services to scale across Kenya as well as to other urban slums throughout Africa.

While BoP enterprises can certainly link formal with informal markets by purchasing goods *from* impoverished individuals, a great deal of practical and academic focus has been on how such enterprises can provide socially valuable products *to* impoverished individuals (London *et al.*, 2010; London and Hart, 2011; Webb *et al.*, 2009a). This consumer segment, referred to as the BoP, live in deep poverty with an annual per capita income of less than \$3,000 in purchasing power parity (Hammond *et al.*, 2007; London *et al.*, 2010). Furthermore, such individuals typically purchase goods and services from subsistence-oriented microenterprises that are not

Keywords: base of the pyramid; informal markets; poverty alleviation; institutional environment; informal economy; poverty
*Correspondence to: Ted London, 724 E. University Ave., Wyly Hall, Ann Arbor, MI 48109, U.S.A. E-mail: tlondon@umich.edu

formally registered with the government (de Soto, 2000; Godfrey, 2011). As such, they transact within the informal economy, which is defined as the subset of the economy where businesses operate illegally in that they do not adhere to established laws and regulations, yet are perceived as legitimate by large groups in a particular society in that they adhere to specified norms (Webb *et al.*, 2009b). Thus, the buying habits of BoP consumers are often influenced by norms and cultural traditions in addition to price and product attributes. To serve this segment, BoP enterprises must become skilled in understanding and responding to the complex set of factors that impact purchase decisions within informal markets (Kistruck *et al.*, 2011).

Drawing upon three streams of literature, entrepreneurship in the informal economy, capability building by BoP enterprises, and consumer behavior in subsistence marketplaces (Bruton, Ireland, and Ketchen, 2012; London and Hart, 2004; Viswanathan, Sridharan, and Ritchie, 2010; Viswanathan *et al.*, 2012; Webb *et al.*, 2009a), we begin by outlining how separate but related dimensions of poverty, including an individual's economic, capability, and relationship well-being, are associated with likelihood of purchase for BoP consumers. Specifically, we hypothesize how income, education, gender, social support, and household size can create norms that significantly influence likelihood of purchase within informal markets. We then present a series of arguments as to how the strength of formal institutions at a more macro level can moderate individual-level purchasing decisions. While transactions within informal markets are, in part, governed by informal norms and values, we hypothesize that they are also significantly influenced by the formal institutional environment as it relates to access to infrastructure, legal systems, health care, public media, etc. (Godfrey, 2011; Webb *et al.*, 2009a).

To test our main effect and interaction hypotheses, we collected data from 555 potential consumers of a BoP enterprise, VisionSpring, which sells inexpensive, high-quality reading glasses within the informal markets of rural India. We collected data on income level (economic well-being), education and gender (capability well-being), and social support and household size (relationship well-being), as well as on the strength of the formal institutional environment.

We find that the effect of economic, capability, and relationship well-being on likelihood of pur-

chase within informal markets is highly contingent upon the strength of the formal institutional environment. With the exception of gender, we fail to find support for such factors as main effects as suggested by prior research. Rather, we find that stronger formal institutional environments may substitute for income, but also act to complement larger social networks and household size within informal markets.

Our study makes several contributions. From an empirical standpoint, to the best of our knowledge, this is the first large-scale, quantitative evaluation of potential BoP enterprise customers (Kolk, Rivera-Santos, and Rufin, forthcoming; Walsh, Kress, and Beyerchen, 2005). From a theoretical perspective, our study makes two important contributions. First, we explore poverty as a multidimensional rather than a unidimensional predictor of consumer behavior (London, 2009; The World Bank, 2001). Previous scholars have emphasized that we need to better understand the influence of poverty on business outcomes (Bruton, 2010; Gulyani and Talukdar, 2010). While prior work has attempted to heed this call by exploring a range of poverty-related factors in informal markets (Dawar and Chattopadhyay, 2002; Viswanathan *et al.*, 2012), such work has not examined such factors in a holistic framework. Second, our findings suggest that the strength of the formal institutional environment is an important contingency in modeling transactional outcomes, even within informal markets. While prior research has suggested that stronger formal institutional environments serve primarily as a substitute for individual- and network-level influences (Greif, 2006; North, 1990), our results suggest that stronger formal institutions can work as both a substitute for, and a complement to, micro-level factors.

BASE-OF-THE-PYRAMID ENTERPRISES

Over the past 50 years, philanthropic efforts have been the dominant approach to alleviating poverty (Sachs, 2005). During this time, donors have spent billions of dollars in primarily grant-based programs to improve the lives of the poor living in the developing world, a segment which more recently has been called the base of the pyramid, or BoP (Prahalad and Hart, 2002). The BoP is defined both by financial hardship (annual per capita income of less than \$3,000 in purchasing power parity) as well

as the reliance of its inhabitants upon informal markets for conducting transactions (Godfrey, 2011; Hammond *et al.*, 2007; London *et al.*, 2010).

Despite the large sums of money spent and the extended history of grant-based programs, these efforts have yet to produce the desired impact on poverty alleviation, leading to growing interest in exploring new approaches (Chambers, 1997; Riddell, 2007). One result is increased attention to the potential of entrepreneurial activities in alleviating poverty, including BoP enterprises (Kistruck *et al.*, 2013; Prahalad and Hammond, 2002). BoP enterprises are revenue-generating ventures that link formal with informal markets by facilitating the transaction of goods and services either *to* or *from* impoverished individuals (London and Hart, 2011). BoP enterprises also seek to be both economically sustainable and contribute to alleviating poverty, a proposition often framed as mutual value creation (London *et al.*, 2010). Creating mutual value requires hearing the voices of the poor (Simanis, Hart, and Duke, 2008).

While the idea of listening to one's potential customers is not new, doing so in the context of the BoP can generate unique challenges (London and Hart, 2011; Rosa and Viswanathan, 2007). BoP consumers often struggle economically, psychologically, and socially within informal markets and such poverty-related challenges can have a significant impact on their purchase decisions (Hammond *et al.*, 2007; Viswanathan and Rosa, 2007). Thus, BoP enterprises must reconsider traditional views of entrepreneurial activity, capability development, and consumer behavior that were developed for formal rather than informal markets (Godfrey, 2011; London and Hart, 2004; Prahalad, 2005; Viswanathan *et al.*, 2012; Webb *et al.*, 2009b). This includes acquiring a greater appreciation of the influence of both financial and norm-related dimensions of poverty on purchase decisions within informal markets (London, 2009; Mair *et al.*, 2012).

THE MULTIDIMENSIONAL EFFECTS OF POVERTY ON PURCHASING

The most salient factors that influence purchase decisions of BoP consumers within informal markets are thought to be different than wealthier consumers in more formal markets (Viswanathan and Rosa, 2007). For example, prior research has suggested that many impoverished consumers within informal markets tend to buy locally due to a lack of trans-

portation options and make purchases on a daily rather than weekly basis due to variability in their income flow (Dawar and Chattopadhyay, 2002). Many consumers within the BoP also tend not to value labor-saving products and services due to the low cost of labor (Dawar and Chattopadhyay, 2002). Therefore, it is important to understand how such differences alter the set of factors that affect the purchase decisions of BoP consumers within informal markets.

While knowledge surrounding the set of factors that most influence the likelihood of purchase for BoP consumers remains somewhat limited (Gulyani and Talukdar, 2010), a number of literatures within the fields of entrepreneurship, strategy, and marketing have begun to separately tackle this question. Entrepreneurship scholars have begun to build a stream of research that explores how micro-entrepreneurs are able to survive and thrive within challenging institutional environments (Bruton *et al.*, 2012; Webb *et al.*, 2012; Webb *et al.*, 2009b). Strategy scholars, focused on the base-of-the-pyramid as a new market opportunity, have contributed a great deal to our understanding of why many customers within such markets, despite their lack of wealth, may be eager to purchase high-quality, socially beneficial products (Prahalad, 2005; Simanis *et al.*, 2008). There is also a burgeoning body of work in marketing on the topic of subsistence markets that suggests factors such as self-esteem and literacy can be significant predictors of purchasing behavior for BoP consumers within informal markets (Viswanathan *et al.*, 2010).

While scholars in all three literature streams agree that poverty is a dominant factor influencing entrepreneurial activity, what has been lacking is a conceptualization of poverty that both captures its pecuniary and associated norm-related dimensions and explains the relative importance of each dimension within a more comprehensive model (The World Bank, 2001; United Nations Development Programme, 1990). Recently, however, greater attention has been focused on closing this gap (Foundation Center, 2012). We use the BoP Impact Assessment framework, which has been successfully implemented in the field and identified as a particularly useful framework by leaders in the development and corporate communities (London, 2009; World Business Council for Sustainable Development, 2013).

Poverty represents a lack of well-being (Chambers, 1997; Sen, 1999). While economists

have often relied on income or expenditures as the key proxy for measuring levels of poverty, relying solely on measures of economic well-being is inadequate (Sen, 1999; United Nations Development Programme, 1990). The dimensions of economic, capability, and relationship well-being put forward in the BoP Impact Assessment framework provide a theoretical framing for developing a set of hypotheses about how different dimensions of poverty may predict likelihood of purchase for BoP consumers within informal markets. The economic dimension captures an individual's financial well-being and control over resources (The World Bank, 2001; United Nations Development Programme, 1990). The capability dimension captures the processes that enable freedom of action and the actual opportunities that individual people have, given their personal circumstances and level of embeddedness within cultural traditions (Sen, 1999). The relationship dimension moves beyond the view of individual capability by incorporating how relations, networks, and connections affect exclusion, prejudicial norms, and geographic isolation within informal markets (Chambers, 1997; Narayan *et al.*, 2000).

Drawing upon an integration of previous work within entrepreneurship, strategy and marketing, we turn now to hypothesizing how each of these three dimensions of our poverty framework—economic, capability, and relationships—are expected to act as significant predictors of likelihood of purchase for BoP consumers within informal markets. We then present a set of hypotheses that specifically incorporate how the strength of the formal institutional environment at a more macro level can be expected to significantly influence these main effects. Figure 1 provides a summary of our conceptual model.

Economic well-being

Income

Economic well-being consists of an individual's command over economic resources for the purpose of consumption, production, investment, or exchange (London, 2009). Income is a standard measure of economic well-being (The World Bank, 2001) and consumption is typically affected by variations in income levels. Across a wide variety of product categories, prior research has suggested that the amount consumers spend on non-food items increases with higher incomes (Hammond *et al.*, 2007).

While variance certainly exists in the income levels of individuals who reside higher on the economic pyramid, such variance is less likely to serve as a significant predictor of purchasing the types of low-cost products typically sold by BoP enterprises. Comparatively, income becomes a much more salient predictor of purchasing even basic goods and services for BoP consumers who operate on very limited budgets (London, 2009). Impoverished individuals often exhibit norms of hopelessness and fatalism (Zucker and Weiner, 1993) that may reduce their likelihood of purchasing socially valuable products that represent ambition or aspiration for a better life. Individuals with extremely low levels of income are also likely less able to tolerate risk (Fafchamps, 2003) and, thus may, be less likely to purchase a product unfamiliar to their local culture.

That is not to say that BoP consumers are incapable of purchasing such products. Prior research on subsistence markets has suggested that even the extremely poor exhibit purchasing discretion in that

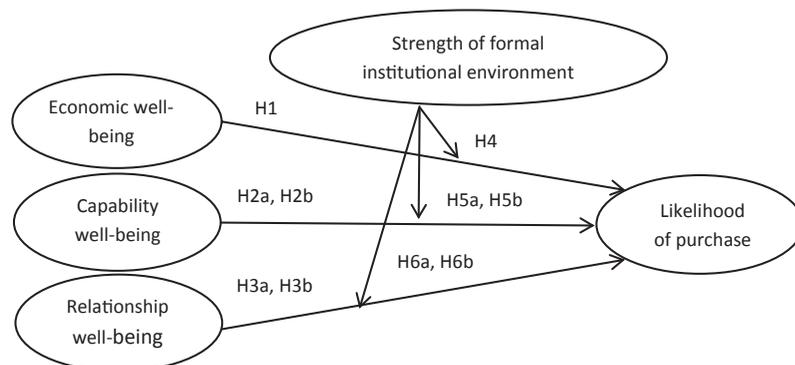


Figure 1. Conceptual model

they do not spend their limited income only on food, but they also pay for entertainment and invest in durable goods (Banerjee and Duflo, 2007). Rather, we hypothesize that income will serve as a particularly important predictor for BoP consumers given the relative cost of products sold by BoP enterprises in relation to absolute income levels of BoP consumers.

Hypothesis 1 (H1): The higher the level of income, the greater the likelihood that an individual will become a customer of products offered by BoP enterprises.

Capability well-being

Education

Capability well-being includes opportunities to draw upon intellectual and physical resources that can enhance the development of an individual's agency (London, 2009; Sen, 1999). Skills and knowledge developed by educational opportunities can facilitate economic participation and enable individuals to make more informed decisions (Sen, 1999). To that end, the United Nations Development Programme (1990) identifies education as a core component of its Human Development Index. As with the first hypothesis, while we expect capabilities in terms of education level to play a role in purchasing decisions within formal markets serving consumers higher on the economic pyramid, such levels are more salient for BoP consumers in informal markets.

A combination of financial necessity and cultural norms regarding appropriate working age within informal markets often results in a significant number of children leaving school at a very young age (Fuller, Singer, and Keiley, 1995). Many families may also not be able to afford the required school fees and uniforms for all their children (Banerjee and Duflo, 2011). Furthermore, many individuals within informal markets marry and engage in child rearing at an early age for reasons of tradition, which similarly limits the number of adolescents pursuing higher educational opportunities (Jensen and Thornton, 2003). The end result is that many BoP consumers within informal markets have relatively low levels of basic reading, writing, and mathematical skills, which can significantly influence their likelihood of purchasing new products from BoP enterprises. A lack of basic literacy or numeracy skills has been shown to limit a BoP con-

sumer's willingness to try new products due to fear of unfamiliar pricing schemes and feelings of futility in making comparisons within subsistence markets (Viswanathan, 2011). With very low levels of education, individuals are more likely to follow existing purchasing norms and routines with local vendors rather than search for information to evaluate new products or vendors (Schmidt and Spreng, 1996). Comparatively, individuals who have received even moderate levels of education display more abstract thinking and a greater willingness to engage with surroundings (Kintgen, Kroll, and Rose, 1988), including greater interest in transacting with unfamiliar partners and trying new products as BoP consumers (Rosa and Viswanathan, 2007). Thus, we hypothesize:

Hypothesis 2a (H2a): The higher the level of education, the greater the likelihood that an individual will become a customer of products offered by BoP enterprises.

Gender

Gender is another salient factor under the capability well-being dimension that we predict will significantly affect the likelihood of purchase for BoP consumers within informal markets. Gender inequality is a predominant cultural norm that restricts the freedoms and capabilities of women across much of the developing world (Sachs, 2005; Sen, 1999). Although women in general continue to face inequity, this inequity is greater in informal markets where it is common for women to have a much lower social status than men and for men to believe that women are subordinate to them (Deutsch, 2007).

In general, prevailing norms regarding women within informal markets significantly diminish the extent to which women influence overall family decision making (Mair *et al.*, 2012). This is particularly relevant to the potential purchase of socially valuable products sold by BoP enterprises, as women are more likely than men to allocate limited resources to products that produce long-term benefit to the family rather than short-term satisfaction of immediate needs (Duflo, 2003). Furthermore, women within informal markets typically lack control over personal financial resources and are often bound by societal expectations to refrain from traveling outside of their local village, as well as from making purchases that are large or nonroutine

in nature (Banerjee and Duflo, 2007; Mair *et al.*, 2012; Sen, 1999). The result is that the gender of a potential BoP consumer within informal markets significantly influences the likelihood that the need or desire will translate to purchase. Thus, we hypothesize the following:

Hypothesis 2b (H2b): Women are less likely than men to become customers of products offered by BoP enterprises.

Relationship well-being

Social support

Relationship well-being involves resources that individuals can draw upon through interpersonal networks and from the surrounding market environment to reduce their isolation or exclusion (London, 2009). Social support, as a factor comprising relationship well-being, refers to the amount of assistance that individuals receive from individuals, groups, and the larger community (Lin, Dean, and Ensel, 1981). At the interpersonal level, individuals develop social support networks in anticipation of benefiting from them (Bourdieu, 1986). Such benefits might include the sharing of risks in endeavors of high uncertainty, collaborating to solve problems, and gaining access to new information (Sparrowe *et al.*, 2001).

We hypothesize that the level of social support will play a particularly significant role in purchasing decisions for BoP consumers within informal markets. BoP consumers with low levels of social support are likely to be more resistant to trying new products, as they lack feedback from informal network ties (Viswanathan *et al.*, 2010). Individuals who live in relative social isolation are also more likely to feel vulnerable and to adhere to existing cultural norms and traditions to cope with such vulnerability rather than engage in experimentation (Baker, Gentry, and Rittenburg, 2005). Comparatively, individuals with high levels of social support are more likely to access and leverage the trust that often accompanies being embedded within informal market networks that help validate potential new transaction partners (Murphy, 2002). Individuals with high levels of social support are also more likely to be exposed to other individuals who have had experience purchasing a new product, and they are more likely to perceive that product favorably themselves (Rosa and Viswanathan, 2007). Thus, we predict:

Hypothesis 3a (H3a): The higher the level of social support, the greater the likelihood that an individual will become a customer of products offered by BoP enterprises.

Household size

The number of people in a potential consumer's household is another characteristic of relationship well-being that is particularly salient for BoP consumers within informal markets. While larger families can produce some income-related benefits with regard to purchasing power, sociologically based research has shown that members of larger families are much more likely to adhere to cultural norms and traditions than members of smaller families (De Vries, Kalmijn, and Liefbroer, 2009). The result of such increased adherence is that individuals belonging to larger families may be less likely to experiment with new products such as those offered by BoP enterprises within informal markets.

While belief and value systems across broader social networks may vary, familial ties often exhibit a high degree of homophily (McPherson, Smith-Lovin, and Cook, 2001). Furthermore, such homophily is constantly reinforced within larger families as compared to smaller families for several reasons. Individuals belonging to larger families are more likely to regularly defer to hierarchal authority in the face of uncertainty rather than to evaluate options at an individual level (Schwartz, 2005). Furthermore, an individual's self-concept and self-worth are often largely attached to the norms and beliefs that historically define their family (Dutton, Dukerich, and Harquail, 1994; Turner, 1975). This identity is strengthened over time through repeated socialization within the family, thus reducing the likelihood of an individual engaging in new activities that do not adhere to traditional beliefs (de Jong, 2009; Webb, Ketchen, and Ireland, 2010). As a result, we expect that BoP consumers belonging to larger families within informal markets would be more likely to adhere to traditional norms than those belonging to smaller families, thereby diminishing the likelihood of purchase. Thus, we hypothesize:

Hypothesis 3b (H3b): The larger the size of the household, the lower the likelihood that an individual will become a customer of products offered by BoP enterprises.

MODERATING EFFECT OF THE STRENGTH OF THE FORMAL INSTITUTIONAL ENVIRONMENT

Prior research has often assumed that the informal markets that serve BoP consumers can be uniformly characterized as formally institutionally void in nature (Mair *et al.*, 2012). However, the preponderance of informal markets is not necessarily evidence of formal institutional voids—individuals may elect to continue to transact, relying on informal norms, values, and traditions despite the existence of formal institutions to avoid taxation, cumbersome bureaucracy, or unwanted attention (de Soto, 2000; Sutter *et al.*, 2013). Thus, while it is true that many individuals within the BoP transact within informal markets and are subsequently guided in part by norms, values, and traditions, they may also be in part influenced by the broader formal institutional landscape that coexists (Godfrey, 2011; North, 1990; Webb *et al.*, 2009a).

Given the diversity of local environments that together constitute the BoP, certain BoP environments are likely to possess stronger financial, educational, informational, and other formal institutions than others (Kistruck *et al.*, 2012b). Thus, we seek to predict how variance in the strength of formal institutions at a macro level may modify the effect of individual-level factors upon likelihood of purchase. Such interactions may prove to be particularly important in moderating the link between individual-level factors and likelihood of purchase, as public institutions may substitute for, as well as complement, private deficiencies.

Economic well-being and strength of formal institutions

Income

We argue that the link between income levels and the likelihood of purchase will be more salient within weaker, as compared to stronger, formal institutional environments for several reasons. Within weaker institutional environments, BoP consumers have limited or no access to social safety nets, unemployment protection, or other programs that are often present in stronger formal markets in the event of work difficulties. This causes such individuals to be much less likely to purchase products they deem as risky or unfamiliar without sufficient stable income to generate significant savings (Hammond *et al.*, 2007; Rosa and Viswanathan, 2007; Schneider and

Enste, 2000). Furthermore, the quality of transportation infrastructure within weaker formal institutional environments also tends to be low, meaning potential BoP consumers may require even more time and money to physically access more central markets where BoP enterprises may be located (Banerjee and Duflo, 2007).

Comparatively, the presence of stronger formal institutions may weaken the link between personal income and likelihood of purchase (Dawar and Chattopadhyay, 2002). For example, as compared to environments with underdeveloped financial institutions, environments with stronger financial infrastructures can facilitate greater purchasing power by providing increased access to bank loans, payment plans, or other credit mechanisms (Banerjee and Duflo, 2007; de Soto, 2000). Additionally, the presence of financial safety nets and other government programs may mitigate norms of hopelessness and fatalism and increase the likelihood that even poorer individuals will invest in socially valuable products that can improve the long-term outlook for them or their families. Therefore, we predict that the salience of income for BoP consumers within informal markets will diminish as the strength of the formal institutional environment increases. More specifically, the direct effect of income on the likelihood of purchase will decrease as the strength of the formal institutional environment increases, given that stronger public institutions work to substitute for deficiencies in private individual income.

Hypothesis 4 (H4): The effect of income on the likelihood that an individual will become a customer of products offered by BoP enterprises depends on the strength of the formal institutional environment.

Capability well-being and strength of formal institutions

Education

The link between an individual's education and whether or not that individual will become a customer of BoP enterprise products is also expected to be more salient within weaker, rather than stronger, formal institutional environments. Within weaker formal institutional environments, there is typically an absence of regulatory or consumer protection agencies (de Soto, 2000). As a result, BoP consumers with low levels of literacy and education are less likely to try new products and services, given that

their lack of understanding regarding product safety and efficacy cannot be substituted by the expert opinions of others within society charged with protecting their well-being (Viswanathan, Rosa, and Harris, 2005). They are likely to prefer to purchase brands and products they are familiar with and trust by way of prior usage rather than attempt to navigate the pros and cons of new products (Viswanathan et al., 2005).

Comparatively, within environments with stronger formal institutions, a culture of exploration is more likely to exist rather than adherence to existing norms and routines (Diamond, Newby, and Varle, 1999). While BoP consumers with low levels of education in such settings may similarly be somewhat reticent to try new products that they do not completely understand, such reluctance may be muted by the presence of government agencies or other organizations providing expert and critical evaluations of new products and services. Furthermore, such information can be communicated by way of easy-to-understand safety labels, or certifications of quality that are easy for uneducated individuals to comprehend (Viswanathan et al., 2005). Therefore, we hypothesize that the relationship between the education level of BoP consumers and likelihood of purchase will decrease as the strength of the formal institutional environment increases.

Hypothesis 5a (H5a): The effect of education on the likelihood that an individual will become a customer of products offered by BoP enterprises will depend on the strength of the formal institutional environment.

Gender

The link between an individual's gender and whether or not that individual will become a customer of BoP enterprise products within informal markets is also expected to be more salient within weaker, as opposed to stronger, formal institutional environments. Poorly developed public media institutions and communications infrastructure reduce the spread of information to different segments of local society (Geertz, 1978; Ménard and Shirley, 2008). The absence of public communications systems, thus, prevents the dissemination of social messages and social movements that may question the traditional ideologies surrounding gender norms (Deutsch, 2007; West and Zimmerman, 1987). Limited transportation options and weak legal institutions may also

impede the safe and efficient mobilization of women to gather in common areas for reasons of public protest (Balk, 1997), as well as to engage in travel to purchase goods.

Comparatively, stronger formal institutional environments may diminish the negative effects of gender upon purchasing. With improved communications infrastructure and a legitimate media, new ideas—including modern messaging centered on gender equity (La Ferrara, Chong, and Duryea, 2012; The World Bank, 2011b)—are more easily shared. The infusing of this new information into society at large can catalyze changes to norms and traditions at a cultural level. Increased safety resulting from stronger enforcement systems and improved public transportation may also make it more likely for women to engage in purchasing activities they used to avoid (The World Bank, 2011a). Therefore, we predict that the direct effect of gender norms on the likelihood of purchase will decrease as the strength of the formal institutional environment increases.

Hypothesis 5b (H5b): The effect of gender on the likelihood that an individual will become a customer of products offered by BoP enterprises will depend on the strength of the formal institutional environment.

Relationship well-being and strength of formal institutions

Social support

Compared to the prior hypotheses, we expect that stronger formal institutional environments will increase, rather than decrease, the main effect of social support on likelihood of purchase for BoP consumers. Thus, while our first three moderating hypotheses portrayed stronger formal institutional environments as having a substitutive effect for individual deficiencies, we expect stronger formal institutions to have a complementary effect on higher levels of social support.

As discussed within our main effect hypothesis, social support networks within informal markets serve as an important source of product information and risk management for BoP consumers. Within stronger formal institutional environments, potential consumers and their support network receive an even greater amount of information from an even more diverse set of public sources such as newspapers, television, or the Internet (The World Bank, 1998;

Viswanathan and Rosa, 2007). Such additional sources can serve to further affirm positive impressions of a new product or new provider from the individual's social network (Viswanathan *et al.*, 2010) or offer additional contradictory information in the event of a negative opinion originating from more traditional social ties.¹ Even for individuals who are relatively socially isolated, exposure to public sources of information can decrease their feelings of vulnerability and encourage them to break with existing traditions. Additionally, improvements in transportation within stronger formal institutional environments are likely to increase access to more people supplying social support. Thus, stronger formal institutional environments complement larger support networks for BoP consumers, as a greater number of network ties will have access to a broader set of information sources. Therefore, we predict that the direct effect of social support on the likelihood of purchase will increase as the strength of the formal institutional environment increases.

Hypothesis 6a (H6a): The effect of social support on the likelihood that an individual will become a customer of products offered by BoP enterprises will depend on the strength of the formal institutional environment.

Household size

We expect that larger household sizes will lead to higher likelihood of purchase for BoP consumers within stronger formal institutional environments. While larger family size can have a negative effect on likelihood of purchase within weak formal institutional environments for reasons of homophily, deference to hierarchical authority, and maintenance of self-identity through adherence to norms and customs (McPherson *et al.*, 2001), larger families within stronger formal institutional environments have an increased likelihood of gaining access to the broader, more heterogeneous set of opinions, values, attitudes, and behaviors by way of access to more diverse information sources (Bowles, 1998). Such new network linkages help prevent the overembeddedness

¹ Our assumption based upon extensive field experience is that the vast majority of socially valuable products sold by BoP enterprises are indeed beneficial to individuals facing poverty. In the event certain products are deemed largely unbeneficial by the public at large, the effect of stronger formal institutional environments would be to complement this negative message, thereby reducing likelihood of purchase.

that can occur when members of large families rely primarily upon frequent exchange with each other to evaluate options and have limited access to external sources of information over time (Arregle *et al.*, forthcoming; Webb *et al.*, 2010).

Thus, while larger families can serve to reinforce existing norms by way of repeated social interaction within the traditional family unit within weak formal institutional environments (The World Bank, 2011b; Webb *et al.*, 2010), they also increase the number of individual contact points through which new information can enter the family sphere by way of new media and enhanced face-to-face contact in environments with stronger communications and transportation institutions. Therefore, larger family size will increase the likelihood of purchase within more formal institutional environments as compared to within weak formal institutional environments. Thus, we hypothesize the following:

Hypothesis 6b (H6b): The effect of household size on the likelihood that an individual will become a customer of products offered by BoP enterprises will depend on the strength of the formal institutional environment.

METHODS

We drew our sample from potential customers of VisionSpring, an organization recognized for using business approaches to solve social problems by linking formal with informal markets. While a non-profit organization, VisionSpring's economic goal is to become a self-sustaining enterprise that scales through the financial viability of its business (Christiansen and London, 2008), thus fitting the definition of a BoP enterprise (London and Hart, 2011).

VisionSpring focuses on addressing presbyopia (inability to focus on near objects) by selling low-cost, high-quality reading glasses in rural areas. To distribute glasses, VisionSpring selects local individuals to become Vision Entrepreneurs (VEs) (Christiansen and London, 2008). VisionSpring provides standardized training and procedures, and a 'Business in a Bag,' that contains spectacles, diagnostic materials, and marketing information. In India, VEs make most of their sales by organizing eye camps in local villages. During the eye camp, the VEs give a standardized eye exam to determine whether each attendee has presbyopia and, if they

do, what prescription they need. They then have the option to purchase the appropriate reading glasses on-site. VisionSpring's reading glasses cost approximately 165 Indian rupees (\$3.44).² These buyers must pay the full amount at the time of purchase.

Our study explored the differences between VisionSpring's customers and a comparison group. Customers were defined as those who attended a VisionSpring eye camp, were screened for presbyopia, were found to have the condition, and who chose to buy glasses. Our comparison group was defined as those who attended a VisionSpring eye camp, were screened for presbyopia, were found to have the condition, and who chose not to buy glasses. The final sample included 555 customer and comparison group members, all earning less than \$3,000 per year and, thus, constituting the 'BoP segment' (Hammond et al., 2007; London et al., 2010).

Procedures

We employed a rigorous process in developing and implementing our survey instrument. We designed an initial survey based on the World Health Organization's recommended process (World Health Organization, 2010), including conducting expert interviews, followed by pre-testing with the target population. Our approach allowed us to leverage expert knowledge and discuss questions, responses, wording, and instructions with potential respondents. The survey instrument was translated into the local language, Telugu. Fidelity to the original English language version was assessed by having another translator back-translate the Telugu instrument into English and then having the research team compare the two English versions.

We piloted the survey to test both the quality of the questions and the process of collecting the data. Using findings from the pilot, we refined the survey instrument and data collection process. We then engaged a third-party organization with substantial experience in rural India to manage data collection.³ Prior to collecting data, one of the authors ran a training program in India to familiarize

interviewers with the survey and the data collection process.

The data were collected using structured interviews with a standard survey instrument. The interviewers were responsible for interviewing both those who elected to purchase glasses and those who did not. To maintain privacy, interviews took place in the respondents' homes. A team leader observed interviews, back-checked 10 percent of the data, and verified that surveys were complete and correct. Data collection began in September 2008 and ended in February 2009.

Dependent variable

The dependent variable measured whether an individual diagnosed with presbyopia purchased reading glasses or not. This dichotomized dummy variable took a value of '1' for individuals who purchased reading glasses (customers) and '0' for those who did not (comparison).

Independent variables

Economic, capability, and relationship well-being

Earned income was measured by items drawn from The World Bank's Living Standard Measurement Survey (LSMS) (The World Bank, 1980). This survey has been used in more than 30 countries. These questions captured both farm and non-farm income. Following standard practice in econometrics, we used the logarithm of income to better capture relative changes in income as opposed to absolute differences in income among potential customers (Stock and Watson, 2003).

Capability well-being was captured using the variables *education* and *gender*. To measure *education*, respondents reported their level of formal education based on 11 categories ranging from none to completed university. To assess *gender*, we asked respondents 'What is your sex?' This dichotomized dummy variable took a value of '0' for males and '1' for females.

Relationship well-being was captured using *social support* and *household size*. The measure of *social support* was drawn from the World Health Organization's Quality of Life-BREF scale (WHOQOL-BREF) (World Health Organization, 2004). The WHOQOL-BREF was rigorously field tested in more than 37 sites around the world and has been shown to display good discriminant validity, content validity, and test-retest reliability. Researchers have

² We used the conversion rate of 48 Indian rupees to \$1, which was representative of the exchange rate during the time of data collection.

³ Hyderabad-based GH Consulting collected the data in all four districts. VisionSpring and the research team shared the costs for implementing this project.

used these measures in more than 20 countries, including India, and have found them comparable across cultures (World Health Organization, 1997). The question measuring social support asked respondents to report on their satisfaction with personal relationships using a five-point Likert-type scale ranging from ‘very dissatisfied (1)’ to ‘very satisfied (5).’ To measure *household size*, we asked respondents ‘Besides yourself, how many other people live in your household?’

Strength of the formal institutional environment

To capture the relative *strength of the formal institutional environment*, we used a modified subscale of the globally validated WHOQOL-BREF instrument. The scale contained six items related to the respondent’s satisfaction with: (1) the availability of health care, (2) transportation, and (3) food, as well as (4) their safety, (5) their physical environment, and (6) their access to information. In each case, the respondent was asked for his/her personal perception of each institutional component, as that—rather than absolute levels of institutional development—is what we believed was most likely to influence a respondent’s purchasing decisions.

The respondents evaluated their satisfaction with the various components of their institutional environment using five-point Likert-type scales with ranges from ‘very dissatisfied (1)’ to ‘very satisfied (5).’ The Cronbach’s α for this scale was 0.6619, which we believe to be acceptable given that a measure of the strength of the institutional environment is likely to be at least somewhat formative rather than reflective given its multi-faceted nature (Coltman *et al.*, 2008). In other words, we expect there to be a number of instances in which some institutions within a given environment may be more developed than others.

Control variables

We incorporated four control variables to help rule out possible confounding explanations. First, we controlled for whether an individual already had a pair of reading glasses before attending the eye camp. *Prior ownership of glasses* took a value of ‘1’ for individuals who already owned reading glasses and 0 for those who did not. Second, we controlled for *vision quality* by using the shortened version of RAND’s Vision Functioning Questionnaire (VFQ) (Mangione *et al.*, 2001; RAND

Health, 2000). We refined or omitted questions not directly related to presbyopia, yielding a 23-item scale. Higher scores indicated fewer vision-related difficulties. The Cronbach’s α for this measure was 0.936. Third, we controlled for *marital status*. Whether a respondent had a spouse could possibly be related to his/her purchasing decision; individuals without a spouse may have more control over household decisions (The World Bank, 2011b). This dichotomized dummy variable took a value of ‘1’ for individuals who were married and ‘0’ for those who were not. Finally, we controlled for *access to microcredit*. Microcredit loans are one of the main avenues for providing BoP consumers with access to financial resources (Collins *et al.*, 2009). This dichotomized dummy variable took on a value of ‘1’ for individuals who had received a microcredit loan in the past year and ‘0’ for those who had not.

Logistic regression model

We employed logistic regression to examine the relationship between our independent and moderating variables of interest and whether individuals elected to purchase or not purchase glasses. We report our findings in terms of odds ratios, which are exponentiated coefficients from a logistic regression model. Odds ratios of *less than 1.0* indicate that increases in a particular independent variable were associated with decreased odds of the outcome of interest. Odds ratios *greater than 1.0* indicate that increases in a particular variable were associated with increases in the odds of the outcome of interest.

We report two models in this manuscript. The first model consists of main effects only. In the second model, we report on a model that includes our measure of the strength of the formal institutional environment, as well as interactions of the strength of the formal institutional environment with income, education, gender, social support, and household size.

RESULTS

There were 275 individuals who chose to purchase glasses and 280 who chose not to. Table 1 presents descriptive statistics and the correlation matrix. The sample was almost evenly split between males and females. Mean monthly income was 1,480.84 rupees or \$1.02 /day.

Table 1. Descriptive statistics and correlations

Variable	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11
1 Customer	0.50	0.50	0	1	1.00										
2 Prior ownership of glasses	0.33	0.47	0	1	-0.09*	1.00									
3 Marital status	0.88	0.32	0	1	0.02	0.03	1.00								
4 Access to microcredit	0.35	0.48	0	1	0.01	-0.03	-0.06	1.00							
5 Vision quality	50.15	16.78	24	98	0.03	-0.04	-0.09*	-0.01	1.00						
6 Earned income (in 10,000 rupees, logged)	5.22	3.38	0	9.36	0.07	-0.04	0.15*	-0.13*	-0.16*	1.00					
7 Education	3.02	2.38	1	11	0.08	0.15	0.14*	-0.17*	-0.10*	0.12*	1.00				
8 Gender	0.48	0.50	0	1	-0.11*	-0.05	0.29*	0.49*	0.10*	-0.35*	-0.35*	1.00			
9 Social support	3.86	0.95	1	5	-0.02	0.11	0.12*	0.06	-0.30*	0.06*	0.05	-0.07	1.00		
10 Household size	3.52	1.89	0	15	0.05	0.00	0.15*	-0.05	0.02	0.03	-0.04	-0.09*	0.02	1.00	
11 Strength of formal institutional environment	20.26	3.58	10	30	0.06	0.12	0.09*	0.02	-0.38*	0.03*	0.07	-0.01	0.41*	-0.04	1.00

* $p < 0.05$.

Evaluation of hypotheses

Analysis of the correlation matrix suggested no variables that were so highly correlated to raise concerns about multicollinearity (Ender, 2010). Multivariate results from the logistic regression are provided in Table 2. We first report results from Model 1. Of the control variables, the coefficient for prior ownership of reading glasses was significant ($p < 0.05$) and less than one. This suggests that owners of reading glasses were less likely to become customers than those who did not have glasses. The coefficient for marital status was not significant. The coefficient for access to microcredit was marginally significant ($p < 0.10$) and was greater than one. This indicates that individuals with prior access to microcredit were more likely to become customers than those who did not access microcredit in the past year. The coefficient for vision quality was not statistically significant in Model 1, indicating that this measure did not predict the purchase of glasses in this sample, all of whom had been diagnosed with presbyopia.

Examining the effect of economic well-being on likelihood of purchase indicates that the coefficient for income was not statistically significant. Thus, H1 was not empirically supported. In terms of capability well-being, the coefficient for education was not significant. Thus, H2a was not supported. The coefficient for gender was strongly significant ($p < 0.01$) and less than one. This indicates that women were less likely than men to become customers. Thus, H2b was supported. Examining the main effects of relationship well-being on likelihood of purchase shows that the coefficients for social support and household size were not significant. As such, H3a and H3b did not receive empirical support.

With regard to the institutional environment hypotheses, we estimated Model 2 in which we included interactions of our measure of the strength of the formal institutional environment with dimensions of economic, capability, and relationship well-being. The interaction of income with the strength of institutional environment was statistically significant ($p < 0.01$) and less than one. Thus H4 was supported. The interactions of education and gender with the strength of the formal institutional environment were not statistically significant; thus, H5a and H5b did not receive empirical support. However, the interactions of social support and household size with the strength of the formal institutional environment were marginally significant ($p < 0.10$) and greater than one. Thus, H6a and H6b were supported.

Table 2. Results of logistic regression model for the likelihood of becoming a customer

Variable	Model 1	Model 2
Prior ownership of glasses	0.660*	0.607**
Marital status	0.873	0.895
Access to microcredit	1.457 [†]	1.513 [†]
Vision quality	1.005	0.011 [†]
Earned income (in 10,000 rupees, logged)	1.017	1.568**
Education	1.058	0.740
Gender	0.570*	0.517
Social support	0.974	0.360*
Household size	1.048	0.638
Strength of formal institutional environment		0.872
Strength of formal institutional environment * Earned income		0.979*
Strength of formal institutional environment * Education		1.017
Strength of formal institutional environment * Gender		1.000
Strength of formal institutional environment * Social support		1.049 [†]
Strength of formal institutional environment * Household size		1.026 [†]
Constant	0.820	10.734
Log likelihood	-375.184	-363.939
Chi-squared	18.980	41.471
N	555	555

[†] $p < 0.10$.
 * $p < 0.05$.
 ** $p < 0.01$.
 *** $p < 0.001$.

However, Hoetker (2007) and Wiersema and Bowen (2009) urge caution in interpreting interaction results with logit models without a deeper understanding of the specific range for which the interaction effects are significant. Therefore, we ran a subsequent analysis using the technique recommend by Ai and Norton (2003) to determine the marginal effects of the significant interactions, and we graphed our results to illustrate the findings⁴. The z-statistic plots have three horizontal lines (lines at

⁴ We also developed plots for the terms that were not statistically significant. These plots confirmed the lack of statistical significance and, thus, were not included in the article.

$z = 1.645, 0$, and -1.645). Results are not statistically significant between the top and bottom horizontal lines, but they are statistically significant at the $p < 0.10$ level when above the top or below the bottom lines.

The interaction effect plot in Figure 2a illustrates an overall negative interaction effect in support of our logistic regression results (i.e., the curves are primarily below zero). The z-statistic plot in Figure 2b suggests that the interaction effect of the strength of the institutional environment is significant across much of the distribution of purchase probability, although the interaction findings are somewhat more mixed at high ranges. The interaction plot in Figure 3a demonstrates a mostly positive interaction effect between social support and strength of the institutional environment, again supporting our logistic regression

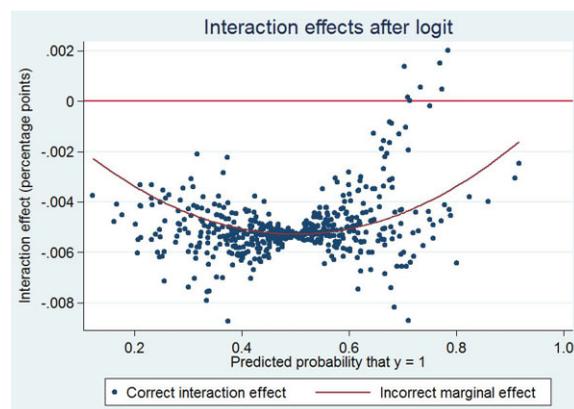


Figure 2a. Graph of interaction effects: earned income and strength of formal institutional environment

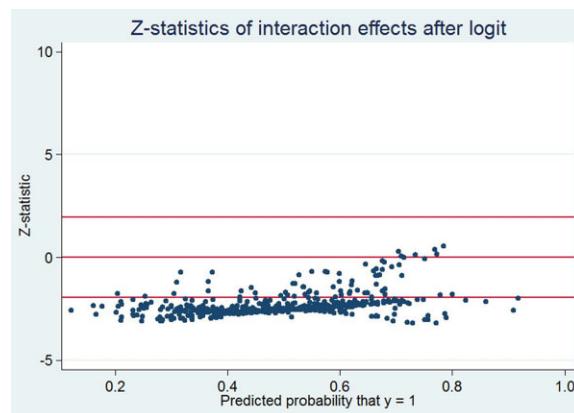


Figure 2b. Graph of z-statistics: earned income and strength of formal institutional environment

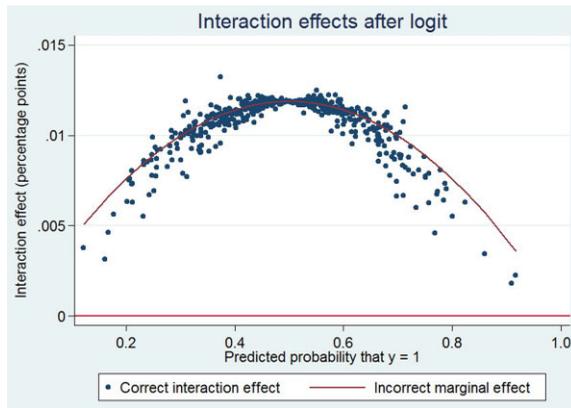


Figure 3a. Graph of interaction effects: social support and strength of formal institutional environment

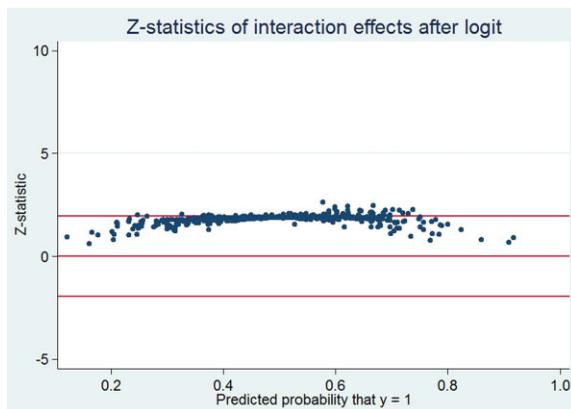


Figure 3b. Graph of z-statistics: social support and strength of formal institutional environment

results. Interestingly, the z-statistic plot in Figure 3b suggests that the interaction achieves significance only for observations at moderate ranges of the probability of purchasing glasses, but is nonsignificant for very low and very high levels of purchase probability. The interaction of household size and strength of the institutional environment is also positive (Figure 4a), supporting our regression results, and again achieves statistical significance only for observations at middle values of probability of purchase (Figure 4b).

These more fine-grained interaction results suggest that the negative interaction of stronger formal institutional environments with income affects the likelihood of purchase across a diverse set of purchase probability values. Comparatively, the positive interaction effects of stronger formal institutional environments with social support and with

household size affect the likelihood of purchase primarily at moderate levels. In other words, while having a stronger institutional environment substitutes for income in most cases, a different pattern holds true for social support and household size. In these cases, when a BoP consumer's probability of purchase is extremely high or extremely low, the strength of the institutional environment may be largely irrelevant to the decisions of whether or not to purchase glasses. Thus, while our subsequent analysis confirms that the strength of the formal institutional environment has a statistically significant moderating effect on income, social support, and household size, the range of values for which the interaction is significant depends on the independent variable.

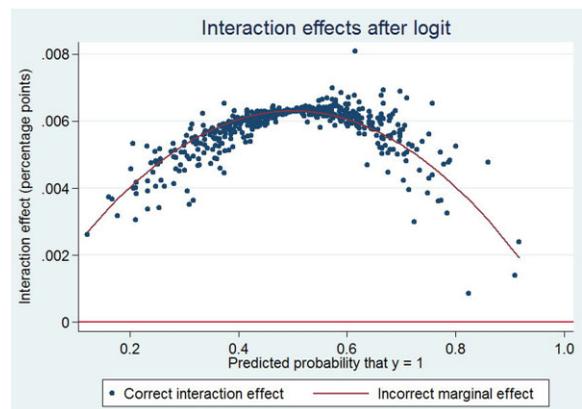


Figure 4a. Graph of interaction effects: household size and strength of formal institutional environment

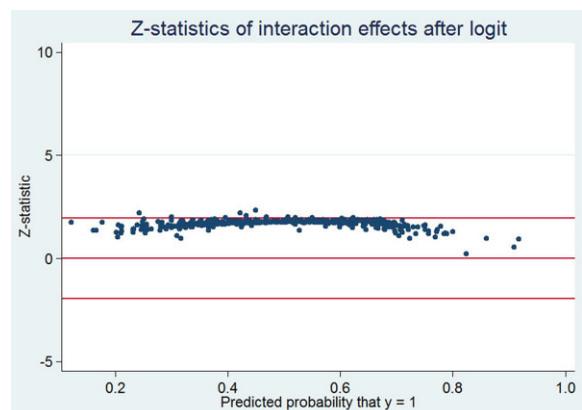


Figure 4b. Graph of z-statistics: household size and strength of formal institutional environment

DISCUSSION

In this study, we sought to gain a richer understanding of the influence of pecuniary and associated norm-related dimensions of poverty on the likelihood of purchase in informal markets, an area recognized as one of the next frontiers in management research (Bruton, 2010; London, 2009). The results of our study suggest that while multiple dimensions of poverty can be particularly salient in purchasing decisions within the informal economy, their salience is largely contingent upon the strength of the formal institutional environment. With the exception of the *gender* variable, none of our main effect hypotheses involving economic, capability, and relationship well-being proved significant. Only when we accounted for the variance within a potential consumer's formal institutional environment did such factors prove to be highly relevant to the purchase decision.

Furthermore, our interaction results suggest that the interplay between individual-level poverty dimensions and environmental-level institutional factors on the purchase decisions of BoP consumers is fairly complex in informal markets. While stronger formal institutional environments resulted in a decreased likelihood of purchase as income increased, it resulted in an increased likelihood of purchase as social support and household size increased. In the case of gender, stronger formal institutional environments seem to have little effect on likelihood of purchase, perhaps given the deep entrenchment of gender roles within existing culture. Such findings stress the importance of taking a multidimensional view of poverty, as well as incorporating variation in the formal institutional environment in entrepreneurship, strategy, and marketing research involving informal markets.

It is worth noting that while higher levels of social support increased the likelihood of purchase within stronger formal institutional environments, our interaction graphs suggest the opposite is true in the case of weaker formal institutional environments. Thus, much like our logic that larger household sizes within weaker formal institutional environments will serve to primarily reinforce preexisting norms and traditions rather than break them, so too will higher levels of social support. It is possible that this occurs because within weak formal institutional environments, poor transportation and communication infrastructure mean an individual's network contacts are primarily at a local level. Thus, for both measures of

relationship well-being, the result may be a similar homophily effect in which more people primarily represent more voices to reinforce existing tradition.

Our study makes a number of empirical, theoretical, and practical contributions. In terms of empirical contribution, our study responds to the call to collect primary data from the BoP segment and the lack of empirical research on entrepreneurship within informal markets (Godfrey, 2011; Walsh *et al.*, 2005). Data collection in this context is quite challenging and, to our knowledge, this is the first large-scale, quantitative evaluation of potential BoP enterprise customers (Kolk *et al.*, forthcoming). Our hope is that other scholars focused on informal markets will continue to push the empirical boundaries in ways that allow us, as academics, to be more quantitatively rigorous in our analyses of the BoP segment.

Theoretically, our work contributes to the burgeoning literature on informal markets in multiple ways. At a fundamental level, the use of the multidimensional BoP Impact Assessment Framework shows that economic factors are not the sole or even primary drivers influencing consumer behavior within informal markets (London, 2009). As our study shows, an individual's capability and relationship well-being can also significantly influence the likelihood of purchase in informal markets. Conceptually, it is imperative that future researchers not oversimplify the poverty-related drivers of consumer behavior within these markets (Viswanathan *et al.*, 2012).

Furthermore, our results support and extend prior findings on how consumer behavior within informal markets is significantly affected by societal norms. Confirming prior research, we find that informal norms such as gender can have a main effect on the likelihood of purchase (Viswanathan, 2011; Viswanathan *et al.*, 2010). Despite research indicating that women are more likely to have presbyopia (Nirmalan *et al.*, 2006), our results indicate that males were far more likely to be customers. However, our interaction results, specifically in regard to social support and household size, suggest that the salience of such norms to purchase decisions within informal markets varies with the strength of formal institutions, which also affect likelihood of purchase. Thus, while certain norms such as gender may be largely impervious to changes within the institutional environment, others are much more significantly impacted by such changes.

Our findings also suggest that variance in the strength of formal institutions between different BoP environments can have important implications

for future research on predictive models of consumer behavior (Dawar and Chattopadhyay, 2002; Viswanathan and Rosa, 2007). Specifically, our findings suggest that stronger formal institutional environments can both substitute for and complement certain individual- and network-level characteristics. While, as much work on institutional theory would predict (North, 1990), our findings suggest that stronger formal institutions can serve to substitute for certain factors (i.e., income), they can also act as a complement to other factors (i.e., social support, household size).

Our findings also highlight how research on informal markets can contribute to our understanding of the informal economy. By focusing on informality from a consumer transaction standpoint, our work highlights how formal institutions coexist with norms, values, and traditions to jointly influence purchasing. Similarly, we would argue that even for businesses that make a conscious decision to operate illegally within the informal economy, their behavior is mutually influenced by both informal norms as well as formal institutions. While such businesses may act outside of the boundaries of legal and other formal government institutions, their decisions and their ultimate success is nevertheless in part influenced by the quality of public infrastructure, education systems, and other formal institutions. Thus, further work exploring the antecedents and outcomes of businesses operating within the informal economy may glean additional insights by accounting for such confluence in their theoretical and empirical models.

Future entrepreneurship and strategy research can also incorporate the theoretical implications of our findings. Scholars studying opportunity recognition and exploitation may want to explore how entrepreneurs account for the norms that are especially salient in informal markets, as well as respond to the substitutive and complementary effects of the formal institutional environment (Webb *et al.*, 2009b). Strategy researchers interested in understanding the specific capabilities firms should build within informal markets may want to pay greater attention to the importance of understanding the strength of the formal institutional environment as it relates to purchasing decisions and how firms can build capabilities to understand and respond to variations in the local institutional context (London and Hart, 2011; London and Hart, 2004).

We hope our study also contributes to practitioners who are eager for guidance on how to navigate

this new frontier. By offering a more holistic framework for understanding the influence of poverty on purchasing decisions, these entrepreneurs now have a tool to identify which financial and norm-based aspects of poverty are most relevant to the population they are seeking to target. This becomes particularly relevant for BoP enterprises seeking to scale across multiple informal markets with varying degrees of institutional strength.

Like any study, ours has some limitations. Our sample may suffer from some selection bias with regard to who attended the eye camp. Future researchers may want to collect a probability sample to better ensure representativeness. Furthermore, while VisionSpring's approach to micro-franchising minimizes the entrepreneur-specific differences, future studies could explore how entrepreneurs' characteristics or activities influence their success. Researchers may also want to conduct similar studies using different products. Eyeglasses, while relatively inexpensive, are not a fast-moving consumer good. Cultural norms and traditions influencing purchasing decisions may be different for products that consumers buy on a more regular basis.

CONCLUSION

As Godfrey (2011: 252) indicates, 'Prahalad's (2005) call to focus on the bottom of the economic pyramid necessarily means understanding how the informal economy works.' In the past, the main defining feature of the BoP was income level. As our study shows, income is but one factor influencing the likelihood of purchase. Norms also influence purchasing behavior in informal markets. Furthermore, the strength of the formal institutional environment can moderate the relative influence of income, norms, and other poverty-related effects. We hope future research benefits from an improved understanding of informal markets and results in more novel theoretical and practical approaches to studying the intersection of poverty and business.

ACKNOWLEDGEMENTS

We would like to thank Tom Carton, Paul Clyde, Jorge Delva, Paul Godfrey, Larry Root, Madhu Viswanathan, Jim Walsh, and Jim Westphal for their comments and feedback on earlier drafts of this manuscript. We also thank Brooke Bonilla, Molly Christiansen, Ashley

Fuller, Nina Henning, Timothy Johnson-Aramaki, Rebecca Karb, Allison Konkel, Ju Lie Ma, Ninive Sanchez, and Sateen Sheth for their research assistance. Additionally, we are grateful to our partners in India, including Jordan Kassalow, Arunesh Singh, and Maruti Ram from VisionSpring and R. Harshavardhan Reddy and Karnati Sridevi from G.H. Consulting.

REFERENCES

- Ai C, Norton EC. 2003. Interaction terms in logit and probit models. *Economics Letters* **80**(1): 123–129.
- Arregle JL, Batjargal B, Hitt MA, Webb JW, Miller T, Tsui AS. Family ties in entrepreneurs' social networks and new venture growth. *Entrepreneurship Theory and Practice*. Forthcoming.
- Baker SM, Gentry JW, Rittenburg TL. 2005. Building understanding of the domain of consumer vulnerability. *Journal of Macromarketing* **25**(2): 128–139.
- Balk D. 1997. Defying gender norms in rural Bangladesh: a social demographic analysis. *Population Studies* **51**(2): 153–172.
- Banerjee AV, Duflo E. 2007. The economic lives of the poor. *Journal of Economic Perspectives* **21**(1): 141–167.
- Banerjee AV, Duflo E. 2011. *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. PublicAffairs: New York.
- Bourdieu P. 1986. The forms of capital. In *Handbook of Theory and Research for the Sociology of Education*, Richardson JG (ed). Greenwood Press: New York; 241–258.
- Bowles S. 1998. Endogenous preferences: the cultural consequences of markets and other economic institutions. *Journal of Economic Literature* **36**(1): 75–111.
- Bruton GD. 2010. Business and the world's poorest billion: the need for an expanded examination by management scholars. *Academy of Management Perspectives* **24**(3): 6–10.
- Bruton GD, Ireland D, Ketchen D. 2012. Toward a research agenda on the informal economy. *Academy of Management Perspectives* **26**(3): 1–11.
- Chambers R. 1997. *Whose Reality Counts? Putting the First Last*. ITDG Publishing: London, U.K.
- Christiansen M, London T. 2008. *VisionSpring: A Lens for Growth at the Base of the Pyramid*. GlobaLens: Ann Arbor, MI.
- Collins D, Morduch J, Rutherford S, Ruthven O. 2009. *Portfolios of the Poor: How the World's Poor Live on \$2 a Day*. Princeton University Press: Princeton, NJ.
- Coltman T, Devinney TM, Midgley DF, Venaik S. 2008. Formative versus reflective measurement models: two applications of formative measurement. *Journal of Business Research* **61**(12): 1250–1262.
- Dawar N, Chattopadhyay A. 2002. Rethinking marketing programs for emerging markets. *Long Range Planning* **35**(5): 457–474.
- de Jong E. 2009. *Culture and Economics: On Values, Economics and International Business*. Routledge: New York.
- de Soto H. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. Basic Books: New York.
- De Vries J, Kalmijn M, Liefbroer AC. 2009. Intergenerational transmission of kinship norms? Evidence from siblings in a multi-actor survey. *Social Science Research* **38**(1): 188–200.
- Deutsch FM. 2007. Undoing gender. *Gender & Society* **21**(1): 106–127.
- Diamond I, Newby M, Varle S. 1999. Female education and fertility: examining the links. In *Critical Perspectives on Schooling and Fertility in the Developing World*, Bledsoe CH, Casterline JB, Johnson-Kuhn JA, Haaga JG (eds). National Academy Press: Washington, D.C.
- Duflo E. 2003. Grandmothers and granddaughters: old age pension and intra-household allocation in South Africa. *World Bank Economic Review* **17**(1): 1–25.
- Dutton JE, Dukerich JM, Harquail CV. 1994. Organizational images and member identification. *Administrative Science Quarterly* **39**(2): 239–263.
- Ender PB. 2010. Collin: Collinearity Diagnostics. UCLA Academic Technology Services, Statistical Consulting Group: Los Angeles, CA.
- Esper H, London T, Kanchwala Y. 2013. *Improved Sanitation and its Impact on Children: An Exploration of Sanergy*. William Davidson Institute: Ann Arbor, MI.
- Fafchamps M. 2003. *Rural Poverty, Risk, and Development*. Edward Elgar Publishing: Cheltenham, U.K.
- Foundation Center. 2012. Tools and resources for assessing social impact. Available at: <http://trasi.foundationcenter.org/record.php?SN=151> (accessed 27 December 2012).
- Fuller B, Singer JD, Keiley M. 1995. Why do daughters leave school in southern Africa? Family economy and mothers' commitments. *Social Forces* **74**(2): 657–681.
- Geertz C. 1978. The bazaar economy: information and search in peasant marketing. *American Economic Review* **68**(2): 28–32.
- Godfrey PC. 2011. Toward a theory of the informal economy. *Academy of Management Annals* **5**(1): 231–277.
- Greif A. 2006. *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*. Cambridge University Press: Cambridge, U.K.
- Gulyani S, Talukdar D. 2010. Inside informality: the links between poverty, microenterprises, and living conditions in Nairobi's slums. *World Development* **38**(12): 1710–1726.
- Hammond AL, Kramer WJ, Katz RS, Tran JT, Walker C. 2007. *The Next Four Billion: Market Size and Business Strategy at the Base of the Pyramid*. World Resources

- Institute and International Finance Corporation: Washington, D.C.
- Hoetker G. 2007. The use of logit and probit models in strategic management research: critical issues. *Strategic Management Journal* **28**(4): 331–343.
- Jensen R, Thornton R. 2003. Early female marriage in the developing world. *Gender & Development* **11**(2): 9–19.
- Kintgen ER, Kroll BM, Rose M. 1988. *Perspectives on Literacy*. Southern Illinois University Press: Carbondale, IL.
- Kistruck GM, Beamish PW, Qureshi I, Sutter CJ. 2013. Social intermediation in base-of-the-pyramid markets. *Journal of Management Studies* **50**(1): 31–66.
- Kistruck GM, Sutter C, Lount R, Smith B. 2012a. Mitigating principal-agent problems in base-of-the-pyramid markets: an identity spillover perspective. *Academy of Management Journal* **56**: 659–685.
- Kistruck GM, Webb J, Sutter CJ, Bailey AVG. 2012b. Entrepreneurial challenges to (in)formality in emerging markets: an institutional polycentricity perspective. Paper presented at the Academy of Management Annual Conference, Boston, MA.
- Kistruck GM, Webb JW, Sutter CJ, Ireland RD. 2011. Microfranchising in base-of-the-pyramid markets: institutional challenges and adaptations to the franchise model. *Entrepreneurship Theory and Practice* **35**(3): 503–531.
- Kolk A, Rivera-Santos M, Rufin C. Reviewing a decade of research on the ‘base/bottom of the pyramid’ (BOP) concept. *Business and Society*. Forthcoming.
- La Ferrara E, Chong A, Duryea S. 2012. Soap operas and fertility: evidence from Brazil. *American Economic Journal: Applied Economics* **4**(4): 1–31.
- Lin N, Dean A, Ensel WM. 1981. Social support scales: a methodological note. *Schizophrenia Bulletin* **7**(1): 73–78.
- London T. 2009. Making better investments at the base of the pyramid. *Harvard Business Review* **87**(5): 106–113.
- London T, Anupindi R, Sheth S. 2010. Creating mutual value: lessons from ventures serving base of the pyramid producers. *Journal of Business Research* **63**(6): 582–594.
- London T, Hart SL. 2004. Reinventing strategies for emerging markets: beyond the transnational model. *Journal of International Business Studies* **35**(5): 350–370.
- London T, Hart SL. 2011. *Next Generation Business Strategies for the Base of the Pyramid: New Approaches for Building Mutual Value*. FT Press: Upper Saddle River, NJ.
- Mair J, Marti I, Ventresca MJ. 2012. Building inclusive markets in rural Bangladesh: how intermediaries work institutional voids. *Academy of Management Journal* **55**(4): 819–850.
- Mangione CM, Lee PP, Gutierrez PR, Spritzer K, Berry S, Hays RD. 2001. Development of the 25-item National Eye Institute Visual Function Questionnaire. *Archives of Ophthalmology* **119**(7): 1050–1058.
- McPherson M, Smith-Lovin L, Cook JM. 2001. Birds of a feather: homophily in social networks. *Annual Review of Sociology* **27**: 415–444.
- Ménard C, Shirley MM. 2008. *Handbook of New Institutional Economics*. Springer: Berlin, Germany.
- Murphy JT. 2002. Networks, trust, and innovation in Tanzania’s manufacturing sector. *World Development* **30**(4): 591–619.
- Narayan D, Patel R, Schafft K, Rademacher A, Koch-Schulte S. 2000. *Voices of the Poor: Can Anyone Hear Us?* Oxford University Press: Oxford, U.K.
- Nirmalan PK, Krishnaiah S, Shamanna BR, Rao GN, Thomas R. 2006. A population-based assessment of presbyopia in the state of Andhra Pradesh, South India: the Andhra Pradesh eye disease study. *Investigative Ophthalmology & Visual Science* **47**(6): 2324–2328.
- North DC. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge University Press: Cambridge, U.K.
- Prahalad CK. 2005. *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits*. Wharton School Publishing: Upper Saddle River, NJ.
- Prahalad CK, Hammond A. 2002. Serving the world’s poor, profitably. *Harvard Business Review* **80**(9): 48–57.
- Prahalad CK, Hart SL. 2002. The fortune at the bottom of the pyramid. *Strategy+Business* **26**: 2–14.
- RAND Health. 2000. *The National Eye Institute 25-Item Visual Function Questionnaire (VFQ-25) Manual: Version 2000*. RAND Health: Santa Monica, CA.
- Riddell RC. 2007. *Does Foreign Aid Really Work?* Oxford University Press: Oxford, U.K.
- Rosa JA, Viswanathan M. 2007. *Product and Market Development for Subsistence Marketplaces*. Elsevier: Oxford, U.K.
- Sachs JD. 2005. *The End of Poverty: Economic Possibilities for Our Time*. Penguin Press: New York.
- Sanergy. 2013. Our approach. Available at: <http://saner.gy/ourapproach/> (accessed 1 June 2013).
- Schmidt JB, Spreng RA. 1996. A proposed model of external consumer information search. *Journal of the Academy of Marketing Science* **24**(3): 246–256.
- Schneider F, Enste DH. 2000. Shadow economies: size, causes, and consequences. *Journal of Economic Literature* **38**(1): 77–114.
- Schwartz SH. 2005. Basic human values: their content and structure across countries. In *Valores e comportamento nas organizações (Values and Behavior in Organizations)*, Porto JB, Tamayo Á (eds). Vozes: Petrópolis, Brazil.
- Sen A. 1999. *Development as Freedom*. Anchor Books: New York.
- Simanis E, Hart S, Duke D. 2008. The base of the pyramid protocol: beyond ‘basic needs’ business strategies. *Innovations* **3**(1): 57–84.
- Sparrowe RT, Liden RC, Wayne SJ, Kraimer ML. 2001. Social networks and the performance of individuals and groups. *Academy of Management Journal* **44**(2): 316–325.
- Stock JH, Watson MW. 2003. *Introduction to Econometrics*. Pearson Education: Boston, MA.

- Sutter CJ, Webb JW, Kistruck GM, Bailey A. 2013. Entrepreneurs' responses to semi-formal illegitimate institutional arrangements. *Journal of Business Venturing* **28**(6): 743–758.
- The World Bank. 1980. *Living Standard Measurement Survey*. The World Bank: Washington, D.C.
- The World Bank. 1998. Knowledge for Development. In *World Development Report 1998/99*. Oxford University Press: New York.
- The World Bank. 2001. *World Development Report 2000/2001: Attacking Poverty*. Oxford University Press: Oxford, U.K.
- The World Bank. 2011a. *Defining Gender in the 21st Century: Talking with Women and Men around the World, A Multi-Country Qualitative Study of Gender and Economic Choice*. The World Bank: Washington, D.C.
- The World Bank. 2011b. *World Development Report 2012: Gender Equality and Development*. The World Bank: Washington, D.C.
- Turner JC. 1975. Social comparison and social identity: some prospects for intergroup behaviour. *European Journal of Social Psychology* **5**(1): 1–34.
- United Nations Development Programme. 1990. *Human Development Report 1990*. Oxford University Press: New York.
- Viswanathan M. 2011. A microlevel approach to understanding BoP marketplaces. In *Next Generation Business Strategies for the Base of the Pyramid: New Approaches for Building Mutual Value*, London T, Hart S (eds). FT Press: Upper Saddle River, NJ.
- Viswanathan M, Rosa JA. 2007. Product and market development for subsistence marketplaces: consumption and entrepreneurship beyond literacy and resource barriers. *Advances in International Management* **20**: 1–17.
- Viswanathan M, Rosa JA, Harris JE. 2005. Decision making and coping of functionally illiterate consumers and some implications for marketing management. *Journal of Marketing* **69**(1): 15–31.
- Viswanathan M, Sridharan S, Ritchie R. 2010. Understanding consumption and entrepreneurship in subsistence marketplaces. *Journal of Business Research* **63**(6): 570–581.
- Viswanathan M, Sridharan S, Ritchie R, Venugopal S, Jung K. 2012. Marketing interactions in subsistence marketplaces: a bottom-up approach to designing public policy. *Journal of Public Policy & Marketing* **31**(2): 159–177.
- Walsh JP, Kress JC, Beyerchen KW. 2005. Book review essay: promises and perils at the bottom of the pyramid: 'the fortune at the bottom of the pyramid: eradicating poverty through profits' by C.K. Prahalad. *Administrative Science Quarterly* **50**(3): 473–482.
- Webb JW, Bruton GD, Tihanyi L, Ireland RD. 2012. Research on entrepreneurship in the informal economy: framing a research agenda. *Journal of Business Venturing* **28**(5): 598–614.
- Webb JW, Ketchen DJ Jr, Ireland RD. 2010. Strategic entrepreneurship within family-controlled firms: opportunities and challenges. *Journal of Family Business Strategy* **1**(2): 67–77.
- Webb JW, Kistruck GM, Ireland RD, Ketchen DJ. 2009a. The entrepreneurship process in base of the pyramid markets: the case of multinational enterprise/nongovernment organization alliances. *Entrepreneurship Theory and Practice* **34**(3): 555–581.
- Webb JW, Tihanyi L, Ireland RD, Sirmon DG. 2009b. You say illegal, I say legitimate: entrepreneurship in the informal economy. *Academy of Management Review* **34**(3): 492–510.
- West C, Zimmerman DH. 1987. Doing gender. *Gender & Society* **1**(2): 125–151.
- Wiersema MF, Bowen HP. 2009. The use of limited dependent variable techniques in strategy research: issues and methods. *Strategic Management Journal* **30**(6): 679–692.
- World Business Council for Sustainable Development. 2013. *Measuring Socio-Economic Impact: A Guide for Business*. Available at: <http://www.wbcsd.org/impact.aspx> (accessed 8 December 2013).
- World Health Organization. 1997. *Measuring Quality of Life: The World Health Organization Quality of Life Instruments (the WHOQOL-100 and the WHOQOL-BREF)*. Geneva, Switzerland.
- World Health Organization. 2004. *The World Health Organization Quality of Life (WHOQOL)-BREF*. Geneva, Switzerland.
- World Health Organization. 2010. Process of translation and adaptation of instruments. Available at: http://www.who.int/substance_abuse/research_tools/translation/en/ (accessed 25 August 2010).
- Zucker GS, Weiner B. 1993. Conservatism and perceptions of poverty: an attributional analysis. *Journal of Applied Social Psychology* **23**(12): 925–943.