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## **The Missing Link in Understanding and Assessing Households' Vulnerability to Poverty: A Conceptual Framework**

Senadjki Abdelhak, Jamalludin Sulaiman and Saidatulakmal Mohd

School of Social Sciences, Universiti Sains Malaysia USM, Minden 11800, Pulau Pinang, Malaysia

*Corresponding Author: Senadjki Abdelhak, School of Social Sciences, Universiti Sains Malaysia USM, Minden 11800, Pulau Pinang, Malaysia Tel: 006012-429-0450*

### **ABSTRACT**

Vulnerability has been a multi-dimensional concept. Theoretically vulnerability does not have yet to be developed well, nor has it been simply defined and measured with a common and acceptable paradigm. Key interest of previous studies relied on exogenous variables that could remain root cause of vulnerability but endogenous variables remain undocumented. This paper has attempted to shed some light in the theoretical gap of vulnerability in addressing poverty and to suggest new endogenous factors that could be decisive to improving the households' risk management and coping capacities. Skills, religious adherence and psychology (attitude) are the factors this study has mainly focused.

**Key words:** Vulnerability to poverty, risk management strategies, coping strategies, skills, level of religiosity and households' psyche

### **INTRODUCTION**

In recent times, researchers have worked for the development of a common definition of vulnerability that may transform its immediate intuitive understanding into its operational domain. Yet, vulnerability has been articulated in a variety of perceptions. Conventionally, vulnerability has been measured as a set of attributes of individuals or groups helping them cope with uncomfortable situations in their lives caused by those like natural disaster (Delor and Hubert, 2000; Glewwe and Hall, 1998; Jalan and Ravallion, 2000; Jalan and Ravallion, 1999; Christiaensen and Subbarao, 2005). However, a most meaningful definition and measurement of vulnerability still seem to be vague and diverse disagreement (Kamanou and Morduch, 2002).

In his attempt to provide a deep insight to vulnerability, Chambers (1989) observed that the concept of vulnerability could be collapsed into two domains: External and internal<sup>1,2</sup>. People are vulnerable because they are prone to exogenous factors like risks and lacking capacity necessary to overcome these risks (Chambers, 1989). Many researchers involving food insecurity accepted Chambers' account of vulnerability and recognised it as guidelines for a potential vulnerability assessment (Jaspars and Shoham, 1999; Young, 1999; Downing, 1991; Christiaensen and Boisvert, 2000). Some have applied it as a basis to understand vulnerability when they deal with households

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<sup>1,2</sup>Vulnerability is the exposure to contingencies and stress, and difficulty in coping with them. Vulnerability has thus two sides: an external side of risks, shocks, and stress to which an individual or household is subject; and an internal side which is defencelessness, meaning a lack of means to cope without damaging loss" (Chambers (1989, p.1)

behaviour-based difficult situations caused by food insecurity (Moser, 1998; Henninger, 1998; Watts and Bohle, 1993; Webb and Harinarayan, 1999; Ellis, 2000; Maxwell *et al.*, 2000; Barrett, 1999; Barrett, 2002).

These studies prioritised an outcome-based approach during their investigation of vulnerability. People are vulnerable to food insecurity when they reportedly experience an adverse consequence perpetrated by risks and shocks (Barrett, 1999), therefore, to uncover the relationship between stressors, response and outcome, the analysis of vulnerability must go beyond ex-post state of vulnerability<sup>3</sup> (Barrett, 2002).

The food insecurity view-based definition of vulnerability has also received significant attention in literatures. Theory of famine or entitlement theory by Sen (1981)<sup>4</sup> featured this type of definition. Vulnerability, according to this theory, can remain a cause of outcome deprivation rather than a cause of hazards and shocks. Sen (1981) explained that famines emerged not because of food inadequacy but because of lack of access to food for people. Only those with entitlements are able to access food. Such entitlements are derived from the ranks of human and physical capital, access to common property resources and variety of social contracts at households, community and state level (Maxwell and Frankenberger, 1992). The absence of entitlements is the principal source to understand the effect of hunger and famine<sup>5</sup>. Therefore, Vulnerability was interpreted as a consequence rather than a cause (Downing, 1991). Household vulnerability then is defined as a function of the value of assets that household own (Moser, 1998) or as “the people’s propensity to fall or stay below the pre-determined food security threshold” (Lovendal and Knowles, 2004)<sup>6</sup>. Thus, vulnerability was anticipated as people asset ownership. People are less vulnerable when they own more assets (Moser, 1998).

In literature, food insecurity presents some stark examples of vulnerability. Households for example are vulnerable to income variation resulting from job loss, economic meltdown, or ailment. Farmers endure vulnerability owing to seasonal weather changes or natural hazards. The literature of disaster management, however, has cited that the concept of vulnerability still remained a definition-vacuum. There were attempts known made to fill this vacuum with a newly developed framework highlighting natural hazard-vulnerability relationship. This framework documented that households and communities became vulnerable when natural disaster impacted them negatively (Kreimer and Arnold, 2000). Vulnerability is often seen as a phenomenon that resulted from stressors (Webb, 1993). Therefore, in disaster management literatures it has been demonstrated that hazards and climate change were the major cause of future poverty directly and indirectly. Thus, making households more vulnerable (Al-Amin and Alam, 2011; Al-Amin *et al.*, 2011; Vaghefi *et al.*, 2011; Mia *et al.*, 2012; Abdelhak *et al.*, 2011; Mwangombe *et al.*, 2011; Amiri and Eslamian, 2010). These studies were considered a less effective understanding of vulnerability to assess it.

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<sup>3</sup>Barrett, 2002 argues that the analysis of vulnerability should include intra-households characteristics and consider the role of assets and behaviours in influencing households. He insisted that the vulnerability assessment could be misleading if the analysis does not consider the interaction between its components (risk, response, and outcome).

<sup>4</sup>Which formed the conceptual basis to assess food security at the micro-level

<sup>5</sup>Moser, 1998 developed a model of asset vulnerability by following the work of Sen (1981); Swift, 1989 and Maxwell and Frankenberger, 1992. This model focused on the poor people’s assets and asset management strategies, and underlines the level and severity of the interface between the exogenous factors such as stressors, and the endogenous factors such as households’ capability (sensitivity), and the system recovery from the exogenous factors or hazards (resilience).

<sup>6</sup>The nature of this minimum welfare threshold depends on the outcome with which one is concerned e.g. food insecurity, poverty, malnutrition etc”. (Lovendal and Knowles, 2004, p.3)

Vulnerability is neither an outcome nor a static internal condition but rather a dynamic property grounded by human relations, a variety of attributes of specific populations and places as well as an interaction based on socio-environmental reasons (Eakin, 2008). In an effort to fill this definition and measurement vacuum of vulnerability, The Sustainable Livelihood Approach (SLA) sought to focus mainly on poor's livelihood style and the nature of their vulnerability alike as the focal point of a livelihoods analysis. It considered the poor to be optimistic in accepting their difficult livelihood situations. While literature of natural disasters<sup>7</sup> tried to explain disasters as a tool to understand vulnerability; the Sustainable Livelihood Approach (SLA) prioritised livelihood as a trigger. It looked at how people act and perform under specific circumstances.

Figure 1 shows a sustainable livelihood model which one can widely use, containing very basic components that largely serve vulnerability analysis and assessment. The model is of three main aspects: A variety of stressors like natural hazards affecting the different types of households' assets and capital<sup>8</sup>, households' risk management and coping skills<sup>9</sup> and policies and institutionalized intervention that help households deal with various risks and shocks. These institutionalized intervention may remain NGOs, CBOs serving the households enhance their capacities (assets)<sup>10</sup>.

Sustainable Livelihood Approach (SLA) has been widely recognized as a pragmatic model helping understand and explain the factors that influence households' livelihood and well-being. Many researchers, global bodies and international non government organizations (INGOs) do employ this model in their vulnerability analysis (Scoones, 1998; Krantz, 2001; Kollmair and Gamper, 2002; Benson and Twigg, 2007; Devereux *et al.*, 2004; Lovendal and Knowles, 2004).

But the major disadvantage of this model has been its failure in guaranteeing assets to be used for reduction of vulnerability even though it, along with Moser's asset model, remains an access to

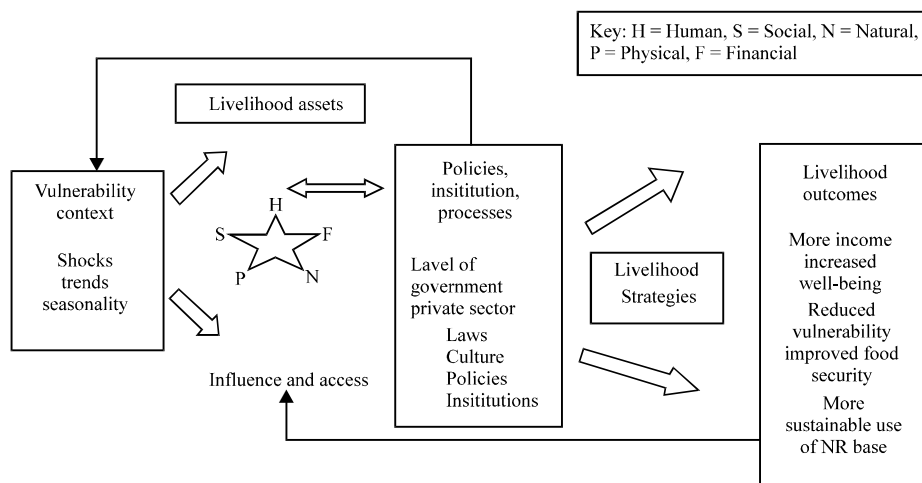


Fig. 1: DFID's sustainable livelihoods framework. Source: Adapted from Benson and Twigg (2007)

<sup>7</sup> For better understanding refer to Alwang *et al.* (2001), Blaikie *et al.* (1994), Wisner *et al.* (2003), Dillely and Boudreua (2001), Cutter (1996), Turner *et al.* (2003) and Devereux (2001).

<sup>8</sup>For example natural disasters such as flood affect natural capital (livestock and crops), physical capital (dwellings and equipments), financial capital (savings), human capital (jobs, life and injuries) and social capital (social networks).

<sup>9</sup>These strategies can be varied and arrayed from physical measures (e.g., building flood embankments, strengthening houses) to social/organizational actions (e.g., reinforcing social support networks, establishing local disaster preparedness committees) and livelihood diversification" (Benson and Twigg, 2007, p.120).

<sup>10</sup>Some of these programs are: access to micro-finance institutions MFI, access to land like agricultural extension, and different projects that contribute to the improvement of households' wellbeing such as political empowerment, job opportunities.

assets (Scaramozzino, 2006). The poor households and communities often are reported employing different strategies during their dealings with risk management. Their risk management and coping strategies may be ineffective (Abdelhak *et al.*, 2012; Ibrahim *et al.*, 2009; Mwangombe *et al.*, 2011). These approaches seem to have overlooked the role of the endogenous factors influencing households' decision-making, while they asserted that households were rational in their choices. Given this omission, this paper will try to prove an observation of vulnerability assessment remaining flawed unless endogenous factors' decisive role household decision-making is recognised.

### **THE MISSING LINK IN ANALYZING HOUSEHOLDS' VULNERABILITY TO POVERTY**

From previous discussions, it is clear that the main causes of households' vulnerability to poverty are: exposure to stressors, lack of assets and entitlements, the ability to cope or resilience. But it is also relying on the characteristics of both households and the regions where those households live. Households' vulnerability is not necessarily caused by natural disaster, lack of entitlements, or risk management strategies. It is a complex mechanism stemming from interaction and combination of various factors.

The sustainable livelihood approach was recognized as the most acceptable model that explains multifaceted elements behind vulnerability concept (Davies, 1996; Scoones, 1998; Krantz, 2001; Kollmair and Gamper, 2002; Benson and Twigg, 2007). The sustainable livelihood approach perceives households' vulnerability as welfare loss (income and assets) resulting from exposure to adverse stressors (i.e. natural disaster and other idiosyncratic risks) and the inability of households, NGOs, CBOs and Government Policies to cope with these stressors. Thus, Households' capacities or resilience is crucial for them to preserve or retrieve themselves from any possible negative effects. The effectiveness of risk management and coping strategies with stressors is determined by a range of factors: Personal, cultural and social (Hinton and Earnest, 2010); social factors constitute supports from various government institutions and access to social organizations (Reid and Vogel, 2006). Paul and Routray (2010) found that a reverse relationship were tied to the efficiency of people involvement and the nature (severity and frequency) of stressors and people's capacities; whereas Eriksen and Silva (2009) believed that economic liberalization significantly impacted households' coping strategies during their survival attempt.

These studies concluded that household's choice of strategies to deal with their possible risks and shocks depended on the conditions and the purpose those for which these strategies were warranted. In his study of household strategies as to shocks and consequences, Hoddinott (2006) reported that householders were using different strategies and that these strategies were driven by their capacities. He also found that rather than investing in their productive assets to generate income and minimize the impact of adverse risks and shocks, households decreased their capabilities by selling these very assets. This strategy could severely impair the well being of households' members who necessarily need to increase their working hours to generate income to ensure minimum nutrition for their families. The above stated factors are the exogenous. Both planning and formulation of Households' strategies are driven by these factors, while, in advancing a strategy, there are also other endogenous factors that influence households' decision. Yohe and Tol (2002) argued that in gaining an understanding of farmers' vulnerability to climate change, tracing their current strategies and potential limits of their capacities to respond to stressors remained necessarily to be studied.

There are ample literature reviews that discuss household risk management and coping strategies. Some of them have investigated the effect of the economic change on households' decision making (Lokshin and Yemtsov, 2004; Eriksen and Silva, 2009) while others have researched the effect of natural disasters on households' risk management and coping strategies (Oldewage-Theron *et al.*, 2006; McGuire and Sperling, 2008; Desalegn *et al.*, 2006; Zarafshani *et al.*, 2007; Thomas, 2008; Liu *et al.*, 2008; Van den Berg, 2010; Saldanazorrilla, 2008; Whitmarsh, 2009), yield distributions (Lybbert, 2006) and idiosyncratic risks (Townsend, 1994; Udry, 1995; Thomas *et al.*, 2010). But these studies, though generally analysed economics and biophysical factors impacting households' decision-making, significantly overlooked the social factors-skills, religion and psychology that remain decisive in development of decision making skill of households. The role of behaviour, emotion and personal factors in households' decision-making has been investigated. Yet, their contribution in this respect has been very small. For example, Willock *et al.* (1999), Fraser *et al.* (2005), Sorensen (1983), carried out researches on intervention of households' behavior or social factors in their decision-making process but their work failed to divulge these factors' contribution to coping capacity of households when they cope with different stressors.

As they are responsible to generate income and amass assets, households are also putting their livelihoods at more risk. They can become chronically poor because their response to shocks may permanently diminish their consumption (Ersado, 2006). In this context, Wamsler (2007) found that although coping strategies are crucial for people's economic development, they are weak in shielding households from shocks and risks and in some cases they are responsible for further vulnerability impoverishment. Also, households' ability to deal with stressors varies from one household to another (Paul and Routray, 2010; Minnegal and Dwyer, 2007). Some of them succeed in achieving effective strategies, while others fail. Undoubtedly this can be explained also by endogenous factors that are responsible in determining the efficiency of households' risk management and coping strategies (Sorensen, 1983; Light, 1990; Liu *et al.*, 2004; Beedell and Rehman, 1999). Three factors taken in consideration in this study are: Education and skills, the level of religiosity and psychological factor (perception, attitude and behaviour).

**The level of education and skills:** The level of education and skills are important factors in enhancing the effectiveness of households' response to shocks and risks and ease their vulnerability. They are an endogenous factor to be heeded in the discussion of variations in the adaptation of households' coping strategies (Paul and Routray, 2010) and are also one of the key determinants of people adaptation to uphold livelihood and improve wealth (D'Oley *et al.*, 1994). Previous studies found that education and dissemination of information played an important role in improving people's adaptive behaviour when negative events occurred (Sorensen, 1983), therefore training must be provided to households living in areas that are feared for possible natural disasters. In his survey of household coping strategy against flood, Paul and Routray (2010) showed that the ability to forecast flood was driven by people's level education. Those possessing higher education were very close to the fact in their prediction of flood and were notably responsive to flood vulnerability. Education intermingled with physical capital like land encouraged and gave households leverage to restore their normal life (Van den Berg, 2010). Other studies suggested that formal education and some of social education programs were not effective in explaining people's perceptions and responses to geophysical hazards (Sorensen, 1983).

Many governments and organizations have already begun initiatives promoting the role of education in enhancement of coping strategies and management. The National Tsunami Hazard Mitigation Program (NTHMP), for example, recognized education as a cornerstone of vulnerability reduction in the United States (Dengler, 2005). It is commonly agreed that the level of education contribute significantly to the enhancement of people's adaptation strategies. Therefore, the educated ones are more efficient and responding to stressors more rationally. The level of educations was investigated and/or analyzed as an asset (human capital) that contributes to household's capacity building (generate income)<sup>11</sup>. Whereas it is apparent that the level of education/skills is also an important element involved endogenous factor boosting peoples' skills to respond to difficulties. A model is warranted to develop promoting education as endogenous factor serving households to frame their coping strategies to vulnerability poverty. Longitudinal data analysis can be viewed as a tool to understand the extent to which the changes by education and skills help cement households' risk management and coping strategies. This tool also tries to explain the phenomenon of why households and communities express different behaviours for the same circumstance.

**Psychological factor:** Apart from education, psychological factor also plays an influential role in improvement of households' coping skills. Scholars have observed that meaningful support and assistance to families is likely to acquire only when the understanding of families' psychological perceptions is achieved extensively (Lazarus, 1968; McCubbin and Figley, 1983). Chaudhuri (2003) reported that those challenged physically and mentally were enduring much of vulnerability to poverty. Wright and Vesala-Husemann (2006) showed that vulnerability and capacity had to be viewed from psycho-social and economic prisms and not merely from physical facts. Personal traits like psychological distress, self-blame, silence and stoicism that prevent families from discussions may be possible hurdles of coping with stressors and negative events (Boss, 1986; Garnefski *et al.*, 2005). Personality and perception of a person constitute important elements helping for problem solving when s/he encounters critical situations (Mancini, 1980; Beedell and Rehman, 1999). However, people's perception of risk seems directed by many factors: personality and contextual behavior and attitude (Cooper, 2003).

Although, the role of psychological factor in household's coping strategies to vulnerability remains undeniable, this area is yet to be examined. Goudge *et al.* (2007) and Berry *et al.* (2009), in their studies, emphasised that the ability of households to manage and to access social networks was negatively impacted by their psychological state. They also found that the combination of illness and increased prevalence of poverty got households stressed and sometimes even depressed. Thus they were unable to deal with their affairs skillfully in a vulnerable situation. Hinton and Earnest (2010) showed that when receiving uncomfortable social relations from their communities, households' coping capacity was seriously impaired.

They, therefore, suggested that the intervention based on psychosocial initiatives could lead their coping capacity to maintain better. Coping strategies are connected with people's emotional situation; personality and confidence; the challenges and the hopefulness (Hinton and Earnest, 2010). Thus there is a tacit link between psychology and households' vulnerability to poverty.

Risks and shocks are also factors that determine people's psychology. Riskind (1999) clearly articulated as to how risks and shocks contributed to destruction of one's psychological capacity. He stated that the losses stemming from unexpected shocks such as death of loved ones, loss of

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<sup>11</sup>Moser (1998)

interpersonal relationships, financial security or health; significantly affected individuals' lives. Depression may be byproduct of these losses. This may affect their livelihoods dramatically. Researchers argue that the target of the Millennium Development Goal (MDG) 2015 on poverty eradication is an implementation of collective efforts of many disciplines (Berry *et al.*, 2009). The constructive organizational psychology can contribute to capacity enhancement of vulnerable communities by initiatives like consultation services upon personal issues (Carr *et al.*, 2008; Berry *et al.*, 2009).

Development of models and mechanisms that may address people's psychological needs, expectations and problems as a result of poverty would help understand how people act to minimize their vulnerability to poverty. An application of longitudinal methodology to analyze people's psychological response to vulnerability to poverty has been significant tool to understand regular changes of their psychological behavior when they experience poverty.

**Religious adherence:** Religion has been a factor influencing increasingly every aspect of human life, shaping their thinking and behaviour (Ensor, 2003; Chester *et al.*, 2008). Its effective intervention is recognised in social, economic and political domain (Gaillard and Texier, 2010). In the better coping strategy formation, religion has played most prominent role (Levin, 1994; Mitchell, 2003). People acknowledge religious teachings and practices, for example worships, highly help them cope with stressors (Abernethy *et al.*, 2002; Mitchell, 2003). This role of religion has not been properly focused in previous studies but instead they have attempted to divulge religion's inalienable relationship with macro-economic (Blum and Dudley, 2001; Barro and Mc-Cleary, 2003). The analysis of how religion influences people's strategies at the micro level was limited and undocumented (Ensor, 2003; Gaillard and Texier, 2010). A need is realized to develop strategies accommodating religious and spiritual values as a key to the resilience of communities. The identification of the multiplicity factors such as bio-physical (Webb, 1993; Dilley and Boudreau, 2001; Blaikie *et al.*, 1994; Wisner *et al.*, 2003; Cutter, 1996; Turner *et al.*, 2003), physical (Sen, 1981; Moser, 1998; Webb and Harinarayan, 1999; Ellis, 2000; Maxwell *et al.*, 2000; Barrett, 1999; Barrett, 2002; Downing, 1991), social (Moser, 1998; Watts and Bohle, 1993) and cultural including religious beliefs (Gaillard and Paton, 1999; Gaillard and Texier, 2010; Andreana, 2010; Crawford, 1998) lead to understand how they rule people during their coping behaviour with stressors, therefore vulnerability to poverty.

At present, the role of religion in this respect is largely acknowledged by growing contemporary researches, focusing on institutionalised religious intervention (such as Mosques, Churches, Temples) in guarding peoples from potential repercussions of disasters (such as tsunami, floods, earthquake, cyclones) (Andreana, 2010; Crawford, 1998; Koenig, 2007). Contemporary studies have revealed a strong presence of religion in peoples' decision making. In their study of religion's role on households, Renneboog and Spaenjers (2009); Fink and Redaelli (2005) found that the economic attitudes of religious households were varied from those of nonreligious ones. Their findings suggested that religious individuals had a stronger bequest motive (meaning they care more about the inheritance of their children than non-religious people). Thus the strong households' bequest led to a high robust of capacities to respond to stressors. This finding was echoed by Keister (2003) and Guiso *et al.* (2003) who discovered that religious households were much more secure than nonreligious ones. Consequently, adverse stressors likes of natural disasters would be hardly detrimental to their livelihoods because their safeguard was empowering them enough in fighting off these stressors. In the course of Tsunami in Aceh of Indonesia, the Muslim victims succeeded soon in recovering themselves from disaster consequences (Gaillard *et al.*, 2008).



Religious teachings and values, worship, trust and hope are also important elements in fashioning households' behavior (Guiso *et al.*, 2003; Renneboog and Spaenjers, 2009). However, studies by Alesina and La Ferrara (2002) and Bellemare and Kroger (2007) found that religious beliefs did not help much to increase households' level of trust. Crawford (1998) believed that hope was one of the factors leading people to recover themselves from stressors, emphasising the ability to view the future in an optimistic way. Religious practices during hardship also play considerable role in consolidating households' coping capacity with and reassert against, shocks. Households with religious adherence are more equipped in handling with disastrous situations (Gaillard and Texier, 2010). Worship is a good sustenance to counter bitter episodes like natural disasters. Worship may also be seen as a powerful mechanism to tackle the threat<sup>12</sup>. It also provides direction to help others (Mitchell, 2003).

But does the religion have a negative impact on people's behaviors? Some studies concluded that religions could also be a cause of misguidance for people to cope with stressors. Religion may lead to inappropriate or helpless behaviors in the face of natural hazards (Gaillard and Texier, 2010). Religious people (Muslims and Christians) believe that natural hazards occur from the will of god (Ensor, 2003; Alam, 1990; Schmuck, 2000). Some of those believers seem to have a fatalistic behavior when they experience disastrous situations (Gaillard and Texier, 2010; Schmuck, 2000) as they prefer to not prepare for and react against, stressors. They choose to leave it to god believing god would decide upon their destiny.

Obviously from the previous research, vulnerability to disaster stress represents a complex web of religious, cultural, social and psychological factors (Gillard and Paton, 1999). One of the important elements that may help minimise people vulnerability to stressors is the level of religiosity. The religious adherence could play an important role, inspiring vulnerable people to choose appropriate behavior to cope with terrible scenarios. People perceptive of the source of hazards may possibly affect the levels of vulnerability in prone areas (Ensor, 2003). The religious people are less stressed (Park and Cohen, 1993) and therefore, are able to find a better rational tactic to prevent and protect them from uncontrollable situations. Meanwhile, the religious adherence may weaken/undermine peoples' coping capacity. Religious people, who believe that the disasters do not befall without knowledge of god, may favor to refer to their deity which they believe determines their destiny. They may not brace for the appropriate measures to safeguard them from dangerous outcomes of any disaster. There has been little evidence as to how religion and particularly the religious adherence, contributes to the understanding of households' vulnerability to poverty. To figure out how households behave and cope with turmoil, it is essential to understand and identify their thought of order (Campbell-Nelson, 2004). This will open an extensive research and also many aspects, in a large topic of religiosity, disasters and people's behaviour and strategies. Developing models and approaches with the use of qualitative methodologies give us a clear picture in understanding how the levels of religiosity of households adopting different cultures and ethnics characteristics impact their decision making when managing against and coping with stressors, therefore determining their level of vulnerability to poverty.

**Framework for vulnerability assessment:** Assets and entitlements (Human, Physical, Social, Natural and Financial) are the core elements in determining households' ability to cope (households' strategies). Thus, the lack of assets impoverishes households' livelihoods. The quality

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<sup>12</sup>If God can turn it on then perhaps God can also turn it off (Mitchell, 2003)

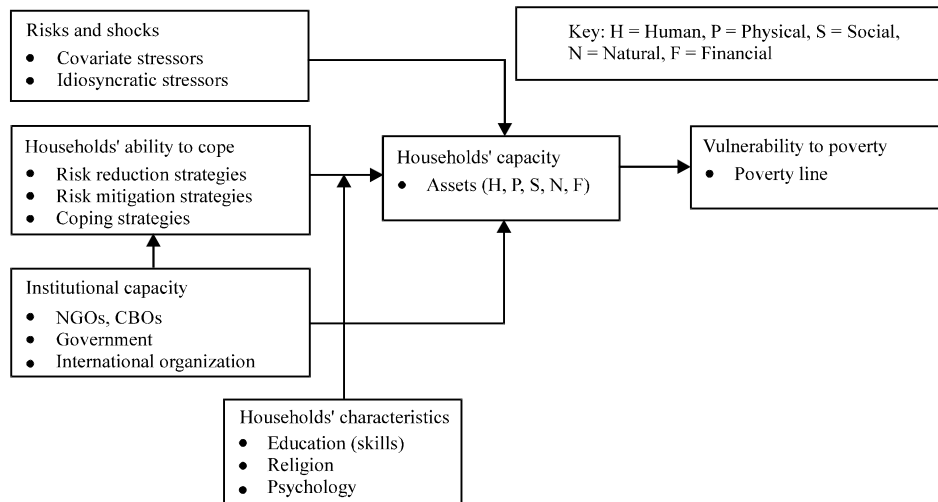


Fig. 2: Theoretical framework for vulnerability assessment

and quantity of assets determine the degree of households' poverty-driven vulnerability. Households with more assets relatively experience less vulnerability.

Vulnerability analysis rested only on households' capacities (income and assets) is misleading and incomplete without the factors causing either losses or increases of these assets. These factors are stressors that households are being to expose to, the "institutional capacity"<sup>13</sup> that contribute in re-built households' assets and households' ability to respond and recover from these stressors (Fig. 2). Therefore stressors, institutional capacity and households' ability to cope must be identified towards a complete analysis of households' vulnerability.

Covariate shocks such as natural disasters can be persistent for individuals, households and communities. They cause not only income losses but losses of assets as well (Van den Berg, 2010). The losses harm rural households' livelihood especially when the natural disasters (i.e., floods) align with other idiosyncratic risks (i.e., illness, loss of job and disability). In addition, the losses may also move beyond the expectations when the severity and frequency of the risks or shocks remains high. The severity by shocks and risks stemming from disasters, likes of floods and droughts, may result in non-chronic illness or temporarily loss of job (Deaton, 1991).

Thus vulnerability can be described as a relationship between risk that household are exposed to and their capacity to manage and cope with these risks (Holzmann and Jorgensen, 1999). Households can access these assets through different ways, such as government and NGOs. Institutions play an important role in determining households' resilience and in mitigating the risk of natural disaster. They can work with households in most needs and communities as partners towards achieving a better living standard through increasing households incomes and reducing the adverse outcomes of shocks. Meanwhile, government has the capacities in increasing rural households' livelihoods thus alleviating poverty-driven vulnerability. It sets rules and enhances rural development through price subsidies, access to land and building rural infrastructures, thus contributing in the achievement of rural households' vulnerability reduction. By providing, accessing and empowering households to different types of assets, households can build their capacity to cope with risks and shocks. The more the empowerment from the government and NGOs

<sup>13</sup>Institutional capacity is the contribution of NGOs, CBOs and Governments in determining and re-building households' capacities.

could widely benefit households; the households enjoying high capacity building face a less vulnerability.

Households' capability to mitigate vulnerability to poverty is not solely depending on the access to entitlements and assets but also on the efficiency of their coping strategies and their risk management (Moser, 1998). Households adopt a variety of formal and informal strategies to deal with natural disasters and a variety of idiosyncratic risks. Holzman (2000) classified households' responses to risks and shocks into three strategies: risk-reduction, risk mitigation and coping strategies. Therefore, households employ both ex-ante and ex-post strategies to minimize the cost accrued by stressors and also in order to generate more income. This variety of mechanisms and strategies vary from household to household. Some households are very skilled in managing and coping with risks. Others are less competent and in some cases, their interventions push them into poverty trap. Wisner *et al.* (2003) defined vulnerability as the attributes of an individual and his condition that shape his ability to cope with and manage against stressors. This definition drew attention to multiple factors that can affect households' ability to cope with risks such as religion, the level of education and persons' psychological situation (perception, behaviour and attitude). These factors established the dissimilarity of achieving risk-reduction objective among households in the same community (Fig. 2).

People who are highly educated have strong ability to cope with risks and shocks compared to those who are less educated. In this context, education means both the formal and informal ones. If households have the knowledge of natural hazards mitigation and emergency responses in schools and universities then their risk management against hazards is more efficient and pragmatic. Meanwhile the traditional knowledge and wisdom are important factors in increasing the sensitivity of households and communities to identify the proper ways and mean to cope with stressors. Thus, combination of both formal and informal education is an efficient way for households and communities to chart and design their risk management and coping strategies.

The religious adherence determines households' coping strategies. The more religiously adhered households are highly capable of their risk management. For example religious households have a long planning for their children future, so they have a strong bequest motive. They do not gamble with the money and they prefer to invest their money in less risky asset categories. Thus they generate more income and avoid losing their savings. This saving can be used in hard time when they face the unexpected shocks. Also the more religious households are relatively less stressful. This is because they strongly believe that what happens to them is occurring already determined fate for theme. Bankoff (2004) found that worshipping during hard time had positive impact on households' social and mental lives, especially in their coping strategies with disastrous hazards. But people may become catalyst in dealing with stressors. The religious people, who believe that disasters such as earthquake take place due to will of god, seek to submit their situation to divine judgment. Thus, they are mostly not equipped and do not want to manage these detrimental situations.

People handle risks differently. Their perceptions are driven by factors like attitude and personality (Cooper, 2003). Those holding strong personality and good attitude are skilful in their risk management. For example, household with weak personality faces a variety of stressors, or may be depressed. Thus he has no ability to manage and cope with these stressors. He may subject to mental health problem and he may suicidal thus makes things worse to his family wellbeing. Fraser *et al.* (2005), reported that stressors had been consistently identified as a major cause of stress and a contributor to suicide, suicidal ideation, psychiatric morbidity and depression.

## **CONCLUSION**

The present study had shed some light in the theoretical gap of vulnerability in addressing poverty and suggested education (skills), level of religiosity and psychology (attitude and behavior) as new endogenous factors that could be decisive to improve the households' risk management and coping strategies. Households' level of education (skills) and their psychological situation were found to be prominent factors that need to be integrating as endogenous factors boosting people's skills of responsiveness to difficult times in their lives. Whereas, although the religious adherence could play an important role inspiring vulnerable people to choose an appropriate behaviour to cope with stressors, it also may weaken or undermine people's coping strategies by misguiding households in choosing appropriately effective and efficient strategies in order to manage against or cope with negative events.

Developing models and approaches that could respond to people's psychological needs, their skills and religious adherence to assess vulnerability to poverty would help understand how people attempt to minimize their vulnerability to poverty. The application of longitudinal methodology to analyze people's level of skills and their psychological response to vulnerability to poverty has been important aspect to understand the regular changes in people's psychological behavior and their skills when they experience a poverty-driven vulnerability. Meanwhile, the use of qualitative methodologies give us clear insight to learn how the levels of religiosity of households adopting different cultures and ethnics characteristics impact their decision making when managing against and coping with stressors, therefore determining their level of vulnerability to poverty.

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