Essays in Customer Engagement

Dissertation

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Chapter 1 – Introduction

Customer management is at the core of marketing and customer engagement aims to enhance the value proposition for the customer. Improving the perceived value proposition for the customer is key to extracting the value (Kumar & Reinartz, 2016). Van Doorn et al's (2010) definition of customer engagement also alludes to the customer side of interaction, especially in a non-purchase context. They define customer engagement as 'the customer's behavioral manifestation toward a brand or firm, beyond purchase, resulting from motivational drivers' (Van Doorn et al, 2010, p.253)

From this definition, it is clear that customer engagement is a construct that is oriented towards capturing brand-oriented behaviors emanating from the consumer, respectively.

The first essay in my dissertation considers the customer engagement at retail point in the form of SKU arrangements on the shelf space. Experimental studies clearly show that certain positions on the shelf space and certain arrangements enhance customer experience leading to greater customer evaluation (eg. Chandon et al, 2009; Hoch et al, 1999). The first essay uses spatial econometric models to estimate the impact of arrangements on sales. It then proceeds to provide an algorithm that helps increase predicted sales through improved arrangements. In my second essay, I consider a context where the firm or brand does not engage the customer directly due to certain limitations. Uniquely, the firm or brand leverages the customer engagement of the channel partner to reach the consumer and sell to her. Below, I outline the two essays in my dissertation, introducing each of my projects followed by the respective abstracts. In keeping with the general trend in academic literature, I use 'we' instead of 'I' in the document going forward.

Retail shelves provide an important touch point in enhancing the customer's experience. Appropriate arrangement of SKUs on the shelf can improve the customer experience leading to greater sales. Research, using experiments, in the past has shown the importance of locating SKUs at eye level in order to attract attention, and other such locational results. In a paper titled ***Sales Effects of Shelf Space Arrangements***, *we consider position-specific sales effects of all items in a shop-shelf arrangement, simultaneously. Thereafter, we (a) jointly estimate shelf position-dependent demand parameters for all SKUs in a focal category, and (b) arrive at 'better' shelf-space arrangements that improve sales outcomes. Using a parametric demand model, we empirically investigate the (a) existence, (b) source, range, and directionality, and (c) monetary value of spatial externalities in product demand and find substantial sales impact (averaging 12% of sales). We use 1 year's sales data for SKUs, arranged in the freezer shelves according to 1 of 4 planograms in frozen chicken category, from 25 stores in a regional g rocery chain. We find that the sales improvement heuristic, which leverages our model's spatial effect parameters, improves sales outcomes by an average 7.25%.*

Rural context in emerging markets often make it difficult for companies to create and enhance customer engagement and benefit from it. These markets often have local organizations such as non-profits, Micro-finance Institutions, etc., that provide services to the consumers and have built a high level of customer engagement. In the second essay titled ***The Role of Ties and Indirect Customer Engagement in Channel Selection for Bottom of the Pyramid Consumers***, *we examine the role of customer engagement of non-traditional intermediary organizations in distribution effectiveness and product sales, and mechanisms that lead to the formation and stability of partnerships between firms and non-traditional intermediaries. The insights from this research help identify new theory and a richer conceptual understanding in the context of low* *income/ bottom of the pyramid markets. The managerial insights enable firms to develop more effective channel strategies for these markets.*

The remainder of the thesis document is organized as follows. The next chapter describes the research capturing the customer engagement in the retail touch point in the form of spatial externalities. The third chapter discusses the research on the special situation where the firm finds it difficult to build customer engagement due to the peculiarities of rural markets, and instead leverages the customer engagement built by its channel partner.

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Chapter 2 – Sales Effects of Shelf Space Arrangements

2.1. Introduction

Retail stores continue to be an important touch point for the customer, even with the advent of e-commerce. One important aspect of the retail touch point is that it provides scope for a multi-dimensional customer experience. The shelf space and the manner in which products are arranged on it is one such aspect. Products kept at eye level attract greater customer evaluation (Chandon, Hutchinson, Bradlow & Young, 2009). Products differentiated on a single attribute, such as same size stock keeping units (SKUs) of the very same product available from different brands kept next to each other facilitate comparison, while products differentiated on multiple dimensions impose cognitive loads (Gourville & Soman, 2005). Thus, location and arrangement of products on the shelf space can enhance or diminish the customer experience, thereby affecting product evaluation and sales.

Traditionally, the subject of product arrangements has been studied under the aegis of category management. Hubner and Kuhn (2012) depict category sales planning as being dependent on two major streams of research; assortment planning (e.g., Fisher & Raman, 2010) and shelf-space planning (Chandon, Hutchinson, Bradlow & Young, 2009). Within the aegis of shelf-space planning, predicated on a given assortment, a sub-stream of literature has focused on computing shelf-facing dependent demand (e.g. Drèze, Hoch & Purk, 1994). Reports in the popular press and parts of the retailing literature document the impact of presentation of merchandise in the store on consumer choice (e.g., Wilkie, 1994; Forster, 2002). While there are studies that explore the position effects of products on shop shelf (e.g. Drèze, Hoch & Purk, 1994; Valenzuela & Raghubir 2009), to the best of our knowledge there are no studies that consider the position effects of all items on a shelf *simultaneously*. A simultaneous analysis of position effects across all items of a shelf has both theoretical and managerial implications. From a theoretical standpoint, estimating the overall positional effects of items on a retail shelf helps expand our understanding of its contribution to sales. From a managerial perspective, the ability to simulate the sales effects of multiple and simultaneous changes in shelf-space arrangements enables an estimation of the incremental sales, and potentially profits, attributable to shelf-space arrangements at very little additional cost. Where and how to arrange SKUs is one of the key questions facing retailers as per Forbes (Bain Insights, 2014). This is especially relevant in the context of average net profit margins of 1.7% (Food Marketing Institute) in the super market industry. Our research aims at estimating the positional effects of SKUs on a category shelf on sales, and arriving at a heuristic that would help the retailer improve sales through simulating different arrangements. We use the term *spatial externalities* to denote the simultaneous and cumulative positional effects of all the SKUs on a category shelf on each other.

To illustrate the research problem, consider a product – the focal SKU – placed somewhere on a retail shelf in a store. This SKU will have other SKUs (or 'items') from the same category placed to its left and right, as well as above and below it. Figure 1 displays a 'planogram', a graphical representation of SKU arrangements on retail shelves. There exists an implicit *neighborhood* of items around any focal SKU that could, presumably, affect its salience, facilitate price comparison, affect its probability of consideration (Simonson & Winer, 1992), affect its probability of purchase (Valenzuela & Raghubir, 2009) and thereby, affect SKU sales through enhanced or diminished customer experience. Manufacturers routinely lobby retailers for certain 'prime' shelf space locations (Forster, 2002), indicating differential returns from shelf position and providing preliminary support for the notion of a neighborhood effect on SKU sales.

Consequently, using the data from one category in a retail chain, we examine whether and to what extent, particular SKU arrangements on a retail shelf (which we posit reflect customers' *internal organization* of that category) have differential sales impact, reflecting the customer's internal organization of category. Specifically, we explore whether the customer's internal organization is based on brands or on product types found in the category.

[Insert Figure 1 here]

Our paper answers the research question, "What are the positional effects of SKUs arranged on a shelf, when considered simultaneously, on SKU sales?". This overarching research question is answered by studying five related sub-questions. The first concerns the *existence* of the hypothesized spatial externalities: "Does an SKU's neighborhood and its location relative to other SKUs exert any significant sales externality?" Second: "What is the *source* of the spatial externality?" An SKU could spatially influence a neighboring SKU either directly through observed attributes (such as brand, price, size, or packaging), which are included in the demand model as predictors. Or it could influence indirectly through latent attributes (or missing variables) which are not present as covariates but whose aggregate effect is captured in a systematic component of the error term. Knowing the source of the spatial externality effect is an important first step towards understanding the nature of the spatial influence. Third: "What is the *range* of the spatial demand externality effect?" To illustrate, in Figure 1, the focal SKU in the center shelf has a set of seven items (items 1,2,3,5,6,7 and 8) in its immediate neighborhood, i.e., SKUs closest to the focal SKU (also termed 'first order neighbors' in the spatial statistics literature). The other items are marked 'NaN' for 'Not a Neighbor'. While the first order neighbors can be expected to relatively strongly influence the focal SKU, one may ask whether SKUs farther away also exert significant and measurable spatial influence. Fourth, the *directionality* of the spatial effects: "Do these externalities vary by direction (horizontal/ same shelf versus all-round)?" In Figure 1, SKUs 3 and 5 are adjacent to and on the same shelf as focal SKU 4. SKUs 2 and 1 are in the shelf above the focal item whereas SKUs 6, 7 and 8 are in the shelf below it. One may ask whether the spatial demand externality, if it exists, is measurably different when acting on SKUs in the same shelf row versus when acting on SKUs in shelf rows above or below. Fifth: "What proportion of sales can be attributed to the influence of position effects in a given planogram?" That is, what is the *monetary value* in terms of incremental sales due to spatial demand externalities?

To address this set of five research sub- questions, we extend a basic model of SKU sales in a category to incorporate spatial dependence effects, identify different modeling specifications corresponding to particular spatial dependence sources and ranges, estimate each of these different model specifications and evaluate the results. A comparison of model fit and performance across these specifications reveals the extent of support in the data for each model condition. We quantify the value of spatial information by measuring the additional sales not explained by a baseline IID specification. We find that the spatial externalities are significant and contribute to 12% of the sales.

Having answered the research question of whether positional effects of SKUs on the shelf space have an impact on sales, we turn to the managerially relevant question, "Given spatial demand parameters, can we improve sales outcomes by re-arranging the assortment?" We utilize the estimated spatial parameters downstream to arrive at ameliorated shelf-space arrangements that improve sales by about 7%.

2.1.1. Related Work in the Literature

Our research question is anchored in the context of customer experience in retail touch point and attempts to understand the spatial externalities arising from the arrangement of SKUs on a self. Gentile, Spiller and Noci (2007, p.397) define customer experience as originating "from a set of interactions between a customer and a product, a company, or part of its organization, which provoke a reaction. This experience is strictly personal and implies the customer's involvement at different levels (rational, emotional, sensorial, physical, and spiritual)." This definition provides the basis for considering the retail touch point as an important place of customer experience, given the amount of time spent by the consumer as well as her level of involvement. Past research on customer experience in the retail touch point finds assortment and retail design (Verhoef et al, 2009), assortment available on the shelf space (Puccinelli et al, 2009), and physical location of the store (Grewal, Levy, & Kumar, 2009) to be contributing to store performance.

When it comes to assortment and their position in the shelf, researchers have shown that reduction in number of SKUs in a category has de-cluttering effect and improves sales (Drèze, Hoch & Purk, 1994), but the reduced variety results in reduced overall sales and frequency of store visits (Borle, Boatwright, Kadane, Nunes, & Galit, 2005), and the SKUs that are differentiated along a single attribute add variety and result in increased sales within a category, whereas SKUs that are differentiated across multiple attributes increase cognitive load on the consumer and result in reduced brand share (Gourville & Soman, 2005). Studies on position of SKUs on a shelf find consumers paying attention to top and middle shelves (Chandon, Hutchinson, Bradlow & Young, 2009), but being inattentive to the centre-stage position in an effect known as ‘centre-of-inattention’ (Valenzuela & Raghubir, 2009), and paying more attention to SKUs adjacent to a focal SKU (Hoch, Bradlow & Wansink, 1999). Kalyanam et al (2007) find that SKUs in a particular category affect not only their own volume of sales but also the overall category sales.

The assortment on a category shelf can also be arranged according to brand or according to product type. The extent to which this arrangement matches the internal organization in the mind of the consumer has an impact on the perceived variety and customer satisfaction (Morales, Kahn, McAlister & Broniarczyk, 2005). Deng, Kahn, Unnava, and Lee (2016) find that assortment processing is more fluent, resulting in perceived variety when the displays of assortment are horizontal versus vertical, indicating potential neighborhood effects.

In contrast to previous work, this paper differs from related literature in that it recognizes multiple, simultaneous position-effects on the sales of each focal item of interest, and enables inquiry into the (a) existence, (b) source, (c) range, (d) directionality, and (e) monetary value of spatial externalities on product sales. The paper differs in the managerial question it is addressing by not only identifying spatial externalities at a shelf level but also by providing an algorithm for increasing sales by identifying improved arrangements. Methodologically our paper differs from the earlier studies in that it jointly estimates aggregate spatial dependence for all the SKUs in a category, and applies spatial econometrics methods at the micro-level of a single retail shelf in a single category. From a data perspective, it is one of only a few studies that looks at positional effects using non-experimental, readily available aggregate level store sales data.

The rest of the paper is structured as follows. Section 2.2 develops the spatial enhancement of the standard demand model and its various specifications corresponding to different sources and ranges of the hypothesized spatial externality effect. Section 2.3 describes the empirical application of the model on the real-world dataset. Section 2.4 discusses the results. Section 2.5 looks at the managerial question of how to improve the arrangement to maximize incremental sales and Section 2.6 concludes with a summary, contribution and directions for future research.

2.2. Model

In its simplest form, the demand equation consists of product sales regressed over a set of demand determinants – typically price, product attributes, channel and promotion variables, some measure of competition effects, etc., and environmental control factors (such as seasonality etc.). Let 'MMIX' denote the 'Marketing Mix' elements, namely, price, channel, promotion and product attributes. In conceptual terms, we can write:

$$\text{Sales} = f\begin{pmatrix} \text{MMIX} & & \text{Environmental} & \text{Control} \\ \text{Elements} & |\,\text{Competition}\,| & \text{factors} \quad | & \text{Variables} \end{pmatrix}. \qquad (1)$$

We can alter this basic demand model by incorporating product-position based spatial influences. With the MMIX elements, competition, environmental factors and control variables, together, labelled as explanatory variables of demand, this altered model can be expressed as:

$$\text{Sales} = f\begin{pmatrix} \text{Explanatory variables} & & \text{Spatial Externality} \\ \text{for demand} & | & \text{Effects} \end{pmatrix}. \qquad (2)$$

The question arises as to how the spatial effects can be incorporated. The shop-shelf can be viewed as a map of spatial relations where every SKU has a neighborhood of other items defined for it (as shown in Figure 1). Following traditional spatial econometric models, we view the position of (say) N SKUs in a planogram as a (potentially irregular) lattice. The set of spatial relations implied by the lattice data can be expressed using an N x N spatial weights matrix **C** (Anselin, 2001). The simplest way to define **C** is as a contiguity or adjacency matrix, which captures the information about the nearest neighbor in a lattice. Each element is either 1 or 0 depending on whether the corresponding pair of observations are immediate neighbors or not. Figure 2 below provides a sample representation of an adjacency matrix for 8 SKUs for illustration. More precisely, for any pair of items (i, j), a contiguity matrix **C**(i, j) can be defined as:

$$\boldsymbol{C}(i,j) = \begin{cases} 1, & if\ items\ i\ and\ j\ are\ immediate\ neighbors \\ 0, & otherwise \end{cases} \qquad (3)$$

[Insert Figure 2 here]

Essentially, **C** represents a simple means to integrate spatial relations in conventional econometric models by "weighing" quantities of interest with spatial neighborhood information. In a shelf arrangement, the SKUs that are located in the corners are constrained to have less number of neighbors by default. Conversely, SKUs that are located towards the center of the shelf will, again by default, have more number of neighbors. This difference in the number of neighbors can potentially impact the spatial weights for a given SKU. In order to avoid biases due to the number of neighbors we formulate **W** matrix as the row-normalized version of the earlier constructed **C** matrix.

Let **Y** represent an N x 1 vector of sales for all SKUs, **I** represent an N x N identity matrix, **X** denote an N x p matrix of covariates with corresponding p x 1 coefficient vector **β** and ε represent the N x 1 vector of mean-zero IID error terms. Prices maybe endogenous to sales since the prices themselves maybe set based on past experience of sales response. Hence, we use upstream cost as price instrument following precedent in the literature (e.g., Chintagunta, Dube

& Singh, 2003; Sriram & Kalwani, 2007). The product positions in the planogram in Figure 1 present a natural interpretation as points in a lattice structure that exhibit spatial interactions (e.g, Cressie 1993, p8-10). We view these spatial interactions using two related but separate dimensions; source and range. In general, there are three common sources of spatial dependence; *modeled effects* (the deterministic trend given explanatory variables **X**), the *unmodeled effects* (omitted variables and measurement errors that go into the error term) and a combination of both (Anselin, 2001). The range of spatial effects is either immediate or extended. Under the 'immediate' range, only the first order neighbors of the focal SKU are assumed to influence the focal SKU's sales. Implementing an immediate range specification using the spatial weights matrix **W** requires that only first order neighbors to each SKU be marked as '1'. In contrast, under the 'extended' range, SKUs beyond the immediate neighborhood are assumed to exert spatial influence, albeit in a diminishing manner.

To illustrate, consider the baseline case in which no spatial dependence is assumed. Here, all the observations are independent, conditional on a known or calculable trend. In its simplest form, a linear model of product demand would be:

$$\mathbf{y} = \mathbf{X\beta} + \boldsymbol{\varepsilon}, \quad \boldsymbol{\varepsilon} \sim N\left(0, \mathbf{I}\sigma_{\varepsilon}^{2}\right). \tag{4}$$

In equation (4), the trend term $\mathbf{X\beta}$ represents the "Modeled effects" of explanatory variables whereas $\boldsymbol{\varepsilon}$ can be interpreted as representing the "unmodeled" effects of residuals. The question may arise as to how to separate non-spatial unobserved effects from spatial or position dependent ones. Any unobserved, non-spatial effects acting across products (e.g. product variety, substitutability, complementarity, etc.) are not affected when a focal item's location or position alone is changed. Therefore, any demand impact due to a position change is attributable to the spatial component of unobservable demand effects alone.

We next describe how the model specification's structure changes as we incorporate spatial dependence into the model and vary the source of spatial dependence for a given range.

2.2.1. Modeling Immediate Neighborhood Autocorrelation

Consider a scenario wherein spatial dependence acts solely through unmodeled effects and within the immediate neighborhood. Following Anselin (2001), the unmodeled effects then take the form:

$$\begin{aligned}\boldsymbol{\varepsilon} &= \left(\mathbf{I}+\gamma\mathbf{W}\right)\mathbf{u},\\ \mathbf{u} &\sim IID\ N\left(0,\sigma_u^2\right).\end{aligned} \tag{5}$$

Here, $\mathbf{I}$ is an identity matrix having the same dimensions as $\mathbf{W}$ and γ is the *spatial autocorrelation* parameter that weighs (in aggregate) the influence of the spatial relations map $\mathbf{W}$ on the IID residuals $\mathbf{u}$. Substituting the $\boldsymbol{\varepsilon}$ in Equation (4) with that in Equation (5), the Spatial Moving Average (or SMA) model (Anselin, 2001) is obtained:

$$\begin{aligned}\mathbf{y} &= \mathbf{X}\boldsymbol{\beta}+\gamma\mathbf{W}\mathbf{u}+\mathbf{u},\\ \mathbf{u} &\sim IID\ N\left(0,\sigma_u^2\right).\end{aligned} \tag{6}$$

The average positional sales effect (or effect on $\mathbf{y}$) that is not explained by $\mathbf{X}$ and that is exerted by first order neighbors mapped in $\mathbf{W}$ is captured in the γ parameter. An alternative way to see the $\gamma\mathbf{W}\mathbf{u}$ term is to view it as a *spatially lagged* IID error term. It is easy to see that setting γ to 0 reduces Equation (6) to Equation (4).

In similar vein, if spatial dependence were to act only through modeled effects (Anselin, 2001) in the immediate neighborhood, the new trend would take the form:

$$\mathbf{X}^*\boldsymbol{\beta}^* = \left(\mathbf{I} + \rho\mathbf{W}\right)\mathbf{X}\boldsymbol{\beta} \tag{7}$$

The demand model in turn would then become:

$$\begin{aligned} &\mathbf{y} = \mathbf{X}^*\boldsymbol{\beta}^* + \boldsymbol{\varepsilon} \\ \Rightarrow\ &\mathbf{y} = \left(\mathbf{I} + \rho\mathbf{W}\right)\mathbf{X}\boldsymbol{\beta} + \boldsymbol{\varepsilon}, \\ &\boldsymbol{\varepsilon} \sim IID\ \ N\left(0, \sigma_\varepsilon^2\right). \end{aligned} \tag{8}$$

Here, ρ denotes the spatial autocorrelation parameter for modeled effects and it assigns a weight in the aggregate to the effect of the neighborhood's trends on the focal item's trend. Thus, ρ captures the position effects on **y** due to spatial influences from the observed attributes (**X**) of first order neighbors. A more general scenario would have spatial dependence acting through both modeled and unmodeled effects with different weights in the immediate neighborhood, thus:

$$\begin{aligned} &\mathbf{y} = \mathbf{X}\boldsymbol{\beta} + \rho\mathbf{W}\mathbf{X}\boldsymbol{\beta} + \mathbf{u} + \gamma\mathbf{W}\mathbf{u}, \\ &\mathbf{u} \sim IID\ \ N\left(0, \sigma_u^2\right). \end{aligned} \tag{9}$$

It is easy to see that the model in Equation (9) nests those in equations (6) and (8).

2.2.2. Modeling Extended Neighborhood Autocorrelation

Under the assumption of an extended neighborhood of spatial dependence, the use of unmodeled effects only for spatial influence yields the following form of the error term:

$$\boldsymbol{\varepsilon} = \ \gamma\mathbf{W}\boldsymbol{\varepsilon} + \mathbf{u},$$

$$\boldsymbol{\varepsilon} = -(\mathbf{I} - \gamma\mathbf{W})^{-1}\mathbf{u},$$

$$\mathbf{u} \sim IID\ N\ (0, \sigma_u^2). \tag{10}$$

The Maclaurin series expansion of the $(\mathbf{I} - \rho\mathbf{W})^{-1}$ term yields extra-local spatial influence that decays for higher order neighbors. Consequently, the demand equation now becomes:

$$\mathbf{y} = \mathbf{X\beta} + (\mathbf{I} - \gamma\mathbf{W})^{-1}\mathbf{u},$$

$$\mathbf{u} \sim IID\ N\ (0, \sigma_u^2). \tag{11}$$

Multiplying $(\mathbf{I} - \rho\mathbf{W})$ to both sides of Equation (11) yields an alternative, auto-regressive form (Aneslin, 2001):

$$\mathbf{y} = \gamma\mathbf{W}\mathbf{y} + (\mathbf{I} - \gamma\mathbf{W})\mathbf{X\beta} + \mathbf{u},$$

$$\mathbf{u} \sim IID\ N\ (0, \sigma_u^2). \tag{12}$$

It is important to note that the spatial dependence in Equation (12) applies simultaneously to all the items in the planogram. Hence, the extended neighborhood unmodeled effects model in Equation (12) is called the *Simultaneous Auto-Regressive* (or SAR) error model in the spatial econometrics literature (Anselin, 1988). Implementing an extended neighborhood range on modeled effects yields:

$$\mathbf{X}^*\boldsymbol{\beta}^* = (\mathbf{I} - \rho\mathbf{W})^{-1}\mathbf{X\beta}. \tag{13}$$

The resulting model contains only a lagged $\mathbf{y}$ term in modeled effects:

$$\mathbf{y} = \left(\mathbf{I} - \rho\mathbf{W}\right)^{-1}\mathbf{X\beta} + \boldsymbol{\varepsilon},$$
$$\Rightarrow \mathbf{y} = \rho\mathbf{W}\mathbf{y} + \mathbf{X\beta} + \left(\mathbf{I} - \rho\mathbf{W}\right)\boldsymbol{\varepsilon}, \tag{14}$$
$$\boldsymbol{\varepsilon} \sim IID \;\; N\left(0, \sigma_{\varepsilon}^{2}\right).$$

Finally, an extended neighborhood range of spatial dependence for both modeled as well as unmodeled effects, the Spatial Durbin model (Anselin, 2001), yields:

$$\mathbf{y} = (\mathbf{I} - \rho\mathbf{W})^{-1}\mathbf{X\beta} + (\mathbf{I} - \boldsymbol{\gamma}\mathbf{W})^{-1}\mathbf{u}, \mathrm{W}$$

$$\mathbf{u} \sim IID\ N\ (0, \sigma_u^2). \tag{15}$$

Equation (15) nests the models in Equations (14) and (12) based on the values of ρ and γ.

Were the two parameters ρ and γcoerced to be homogenous, we would have a homogenous parameters model as seen in (16):

$$\mathbf{y} = (\mathbf{I} - \rho\mathbf{W})^{-1}\mathbf{X\beta} + (\mathbf{I} - \boldsymbol{\rho}\mathbf{W})^{-1}\mathbf{u},$$

$$\mathbf{u} \sim IID\ N\ (0, \sigma_u^2). \tag{16}$$

Taken together, the models in Equations (5) to (16) show that there exists a set of modeling possibilities to incorporate spatial demand externalities into a linear demand system. These models are estimated using maximum likelihood estimators. Table 1 displays a set of eight such possible model specifications, labeled 1 through 8. Each specification in Table 1 assumes a particular state of the world and estimates model parameters that best fit the data.

A comparison of model fit across specifications gives an idea about which assumptions find the most empirical support. Further, past literature provides us support to build expectations on the models. We employ the Akaike Information Criterion (AIC) for assessing complexity penalized model fit, the simple log-likelihood measure and the root mean square error (RMSE) metric (for non-parametric fit). Finally, we quantify the value of spatial information by measuring the additional units not captured under a baseline IID specification.

2.3. Empirical analysis

2.3.1. Dataset and Variables

We implement our model on annual sales data for the packaged frozen chicken category from a mid-sized retail chain based in the US Northeast. We chose the frozen chicken category for three reasons: One, it requires refrigerated shelf space. Hence, we are assured that no outside "display" happened in the period sampled. Two, shelf space inside the frozen section is constrained by the need for refrigeration and allows only a limited number of items. Due to this, the SKUs in our sample have only one facing, further reducing the confounding effect of other factors. Three, planograms in this category are either "type-blocked" or "brand-blocked". In type-blocked planograms, all SKUs for a particular product type (say, chicken tenders or chicken wings) are placed together regardless of brand. In brand-blocked planograms, on the other hand, different SKUs from a brand are arranged together regardless of the differences in product type. The existence of both type- and brand- blocked planograms lends to a simple natural experiment on whether sales outcomes vary systematically with the kind of blocking employed in the planograms.

In our dataset, the focal retailer provided data from 25 stores and each store had its frozen chicken category items arranged according to one of four distinct planogram arrangements - labeled I through IV. Of these, planogram arrangements I and II were type-blocked, and III and IV were brand-blocked. The category has between 41-57 SKUs from 6 different brands. Table 2 presents a brief description and numerical summary of the variables used in the empirical analysis. During the year, the retailer did not alter the arrangements for any of the planograms, and there were no stock-outs recorded. For the category, the retailer did not arrange for alternate or additional display locations during the period under consideration. We use as our dependent variable '**units**', the sum of units sold for each SKU in a year. Using **units** allows us to average over price promotions on particular items (the retailer did not have any reliable data on price discounting in the dataset). To address price endogeneity effects in the demand system, we use upstream costs for each SKU, denoted as '**ucost**', as an instrumental variable for its unit price ('**uprice**') following standard practice (e.g., Chintagunta, Dube & Singh 2003; Sriram & Kalwani 2007). Among product attributes, we employ five brand dummies for national brands – **Tyson, Barber, Perdue, Banquet** and **Weaver** – in addition to the store brand, **StoreBrand,** which is taken as reference brand. We use five product **type** dummies – **Breast, Wings, Nuggets, Patties** and **Strip.** The last product type, '**tenderloin**' is used as the reference attribute. Among continuous variables, '**Oz**' denotes the product weight in ounces, '**Oz^2**' is the square of **Oz,** '**CategSize**' denotes category revenue and serves as a control for store size.

In the conceptual model (Equation 1 above), as general formulation, we include environmental factors as a group of explanatory variables. However, in the implementation, we do not include environmental factors such as seasonality, as our dependent variable is the sum of SKU sales during a twelve-month period that eliminates any such variations.

2.3.2. Empirical Model

Let j = 1,2,..,J index SKUs and s = 1,2,..,S index stores. The econometric model written in terms of the variables defined in the previous subsection can now be written as:

$$\text{units}_{js} = \underbrace{\begin{matrix} \beta_0 + \beta_1 * \text{ucost}_{js} + \beta_2 * \text{Oz}_j + \beta_3 * \text{Oz}_j^2 + \beta_4 * \text{CategSize}_s \\ + \sum_{k=1}^{5} \beta_{4+k} * \text{BrandDummy}_{j,k} + \sum_{l=1}^{5} \beta_{9+l} * \text{Product.Type}_{j,l} \end{matrix}}_{\mathbf{X\beta}} + \varepsilon_{js}. \quad (17)$$

Equation (17) is of the form given in Equation (4) and depending on the spatial weights matrix for each store $\mathbf{W}_s$, and the assumptions on the structure of spatial dependence that are made, all the models described in equations (5) to (16) apply. Figure 3 displays the block diagonal structure for all $\mathbf{W}_s$ belonging to the same planogram arrangement. The zero value in the off-diagonal cells of the **W** matrix in Figure 3 is intuitive in that no two SKUs from different stores can be neighbors of each other. Thus, where originally each store-dataset had less than 60 observations, by stacking together stores using the same planogram arrangement, the degrees of freedom available increase manifold. Further, the **W** matrix is row-standardized following standard practice (e.g., Banerjee, Carlin & Gelfand, 2004). The models are all estimated on the R platform (R development core team, 2004). We follow Bivand's (2013) procedure in estimating the simultaneous autoregression model.

2.4. Estimation Results

We address the five research sub-questions in turn. First, we test the assumption of spatial association. Table 4 displays the value and significance of the spatial parameters. We find evidence that the spatial parameters in most specifications are significant at 0.05 level (as indicated by the parameter value displayed in bold), answering the sub-question on existence of spatial effects in the positive.

Next, we examine the mechanism through which spatial dependence acts: modeled effects, unmodeled effects or both? Based on Gourville and Soman's (2005) findings, we expect that a brand-blocked arrangement will bring SKUs of different types of frozen chicken (say, chicken wings, breasts, strips, etc.) together resulting in difficulty in comparison. In contrast, in the type-blocked arrangement, the SKUs will be of identical type and, therefore, will be more readily comparable along one attribute. This should result in non attributes based effects dominating for the brand-blocked planograms, leading to the expectation that the unmodeled effects will dominate for these models. In the case of type blocked planograms, we expect the modeled effects to dominate. Table 3 displays model fit and Table 4 displays spatial parameter estimates. The results in Table 3 indicate that spatial externalities act primarily through the error term (unmodeled effects). This mechanism is important in all four planogram types analyzed. The implication appears to be that factors other than the main product features are primarily exerting spatial influence. However, modeled effects (effects acting through observables) as a source mechanism turn up significant in two of four cases. Both these cases correspond to the type-blocked planograms in our dataset. Since the same set of SKUs are present in all the planograms, the significance of modeled effects in some planograms and not others can be explained only by the differences in particular SKU arrangements across planograms. Thus, *prima facie*, the empirical evidence says that type-blocked planograms give main product features greater salience and importance than brand-blocked planograms.

We treat the range of spatial influence as an empirical question. We draw on Hoch, Bradlow, and Wansink (1999) to build the expectation that the range of effects will be across the extended rather than the immediate neighborhood. Hence, there will be spatial autocorrelation at play. The evidence from the empirical analysis of the four planogram arrangements is shown in Table 3. The best AIC models are in the extended neighborhood specification for all four planograms.

We investigate directionality next. We consider two directions of interest – horizontal (in the same shelf level) and vertical (cutting across shelf levels) for first order neighbors. If it is true that products kept right next to each other on the same shelf level are more likely to be compared and contrasted and hence, exert spatial influence, then a neighborhood structure that defines only horizontal neighbors as first order neighbors can be coded into a revised **W** matrix. Alternately, a more expanded view could consider items on shelves directly above and below the focal item also as first order neighbors. We run separate models with different **W** matrices corresponding to different direction specifications of interest. We find significant spatial influence in all directions (vertical and diagonally across) around the focal item rather than horizontal alone.

We next measure the impact of spatial information in tangible terms (such as sales). Following Cressie (1993), spatial fitted values are defined as:

$$\begin{pmatrix} \text{Fitted} \\ \text{Value} \end{pmatrix} = \begin{pmatrix} \text{Fixed} \\ \text{Trend} \end{pmatrix} + \begin{pmatrix} \text{Spatial} \\ \text{Signal} \end{pmatrix}. \tag{18}$$

And the value of the spatial signal is estimated simply as the absolute difference between the fitted values of the best fitting spatial model and that of the baseline IID model. As the dependent variable is unit sales, the fitted values also carry the same units as does the spatial signal. Table 5 depicts the spatial signal, both in unit sales terms and as percentage of the fitted values for each of the four planogram arrangements in the data. Table 5 indicates that the spatial component is important and contributes to the result in ways in which the IID model does not. Further, the type-blocked planograms appear to have a higher average spatial effect (14.3%) than do the brand-blocked planograms (10.1%).

2.5. Discussion

Our study intended to find the positional effects of SKUs in a shelf space on sales. Our approach to answering this question was to answer five related sub-questions. Based on past research, we expected to find the extended neighborhood effects dominate immediate neighborhood effects. We find that this is borne out by the results. We had also expected that the unmodeled effects (through error term) would dominate modeled effects (through the observed variables) for brand-blocked arrangements due to the variations across different attributes between neighbors Conversely, we expected that modeled effects would dominate unmolded effects in the type-blocked planograms due to neighbors being comparable on single attribute. We find support for this in our results with the brand blocked planograms having unmodeled effects as the dominant model. With the type blocked planograms we find that both modeled and unmodeled effects are significant, but modeled effects dominate unmodeled effects. Morales, Kahm, McAlister, & Broniarczyk (2005) point to the effects of congruence between customer's internal and the retailer's external organization of SKUs through experimental studies. Our results show type blocked as being the customer's internal organization for the frozen chicken category.

From an application perspective, managers would be interested to know whether one can improve the sales, and potentially their profits, by changing the arrangement of items. We test this by building a routine to leverage positional externalities in item arrangements for all four planogram types, both with and without brand/ type constraints. We run the routine keeping the brand / type constraints, owing to institutional reasons (e.g. contractual obligations with certain brands that require their SKUs to be kept together) at retail stores on displays being brand or type blocked. We limit our attention to the arrangements that are empirically identified as best fitting (from Table 3). Given that managers have intuitively worked on shelf arrangements through trial and error, *ex ante*, we would expect any improvement to be small, but not insubstantial.

Optimizing positional arrangements for, say, 30 SKUs in a planogram yields 30! possible configurations to evaluate. Searching over such a large space is hard, costly in terms of processing power, and non-scalable. Hence, we employ a heuristic algorithm that uses the estimated spatial demand parameters as inputs to ameliorate sales. We provide the details of the heuristic algorithm in Appendix I. Table 6 presents the results of the routine, providing the improvement in expected sales compared to the original planogram. While the improvements range from 3.09% to 14.29%, the unconstrained routine (Panel A) performed consistently better than the brand or type constrained ones (Panel B). This is along expected lines. Thus, the results strongly suggest that managers can improve the sales, potentially leading to improved profits, by altering item arrangements such that the spatial demand externalities are better leveraged.

2.6. Conclusion

We present a spatial model of product demand that accounts for potential position-on-shelf effects arising from particular arrangements of products on the shop-shelf. Our results clearly show that there exists spatial externalities or simultaneous positional effects of all SKUs taken together on a shelf on the sales of the SKUs. We find that the source depends on the type of arrangement, having tested the two most commonly found arrangements in the real world – type-blocked and brand-blocked- and find that, as per expectations based on past literature, the spatial effects acting through observables (modeled effects) dominate type-blocked arrangements, while the brand-blocked arrangements are dominated by the spatial effects acting through the error term (unmodeled effects). We also find that the effects are present over the extended neighborhood.

In substantive terms, our analysis is empirical in contrast to analytical and experimental studies that dominate the literature in this sub-area. We contribute to theory by providing a better understanding of the overall positional effects of all the SKUs on a shelf considered simultaneously. We find that not only are the effects significant, these effects are also extended in range. Thus, shelf-space planners need to be mindful of the entire assortment of products being put on display and not just a subset in the immediate neighborhood of any focal SKU. Further, products above and below a focal product appear to exert position-effects on the focal SKU's sales. Hence, it is not merely products on the same shelf-level that have to be considered but SKUs above and below as well. Finally, the sales impact attributable to position effects appears to be substantial and measurable - ranging from an average of 14.3% for type-blocked planograms to 10.1% for brand-blocked ones.

Our second substantive contribution is in arriving at type-blocked as the customer's internal organization for the frozen chicken category. More importantly, we provide a means for retailers to understand the internal organization of the customer, category-by-category, using the planogram, sales and other data readily available with them.

Our third substantive contribution lies in utilizing spatial demand parameters as inputs for an improvement heuristic. This is of managerial interest and we show an average 7% gain in sales outcomes for the improved planogram as opposed to the current arrangement.

In methods terms, we view shelf-facings as a lattice in space and apply a spatial econometric model that nests special cases corresponding to different sources of spatial dependence (modeled trend, unmodeled effects), different ranges of spatial dependence (immediate versus extended neighborhoods), as well as different directionalities of spatial interaction (horizontal only versus all-round). Further, in a methodological contribution, we demonstrate a block-diagonal spatial weights matrix scheme to get around the limited degrees of freedom available from just one store's planogram.

The paper has certain limitations that future research could address. One, we considered only one category within one retail chain from one city in our analysis. While this helped maintain consistency in demand patterns, for greater generalizability, future research can extend the analysis to include more categories, retailers, and geographic locations. Two, we abstracted away from the time dimension in our use of cross-sectional data. Future research could consider spatial-temporal models that leverage sales variation in the time dimension as well. Three, we considered a parametric (Gaussian based) spatial model. Future research could extend the model into semi- and non-parametric domains (e.g., Banerjee, Carlin, & Gelfand 2004). Four, we considered the adjacency and contiguity type spatial weights matrices. Future research could consider other methods of specifying the spatial weights matrix. Five, we assume a negligible role for unobserved, non-spatial covariates that are correlated with spatial effects and hence may confound the spatial effect. A careful selection of variables in a richer dataset or corroboration with a field experimental setup can help alleviate this issue. Overall, there appears to be ample scope to build upon and extend the basic spatial models described in the paper in the focal domain.

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Table 1: Spatial Dependence Model Taxonomy

		Neighborhood Range	
		Immediate	Extended (Diminishing Effects)
Effects	Modeled	Model 1 (Eq. 8)	Model 2 (Eq. 14)
Effects	Unmodeled	Model 3 (Eq. 6) (Spatial Moving Average)	Model 4 (Eq. 12) (Spatial Autoregressive)
Effects	Both	Model 5 (Eq. 9)	Model 6 (Eq. 16) (Homogenous Parameters)
Effects	Both	Model 5 (Eq. 9)	Model 7 (Eq. 15) (Heterogenous Parameters)
	No Spatial Dependence	Model 8 (Eq. 4) Baseline Model (IID)	

Table 2: Summary of Analysis Variables

Group	Variable	Notation	Mean (s.d.)
Dependent Variable	Units of the SKU sold per year	units	415.7 (402.3)
Sales related variables	SKU price	uprice	5.51 (1.94)
	SKU wholesale cost	ucost	3.71 (1.63)
	SKU size in Ounces	oz	22.51 (9.98)
	Sum of SKUs sold in per store-Year	CategSize	25862.8 (8975.2)
Brand Dummies	Tyson	Tyson	0.583
	Barber	Barber	0.06
	Perdue	Perdue	0.045
	Banquet	Banquet	0.157
	Weaver	Weaver	0.07
	Store brand	StoreBrand	0.04
Product Type Attribute	Chicken Breast	Breast	0.355
	Chiecken Wings	Wings	0.183
	Chicken Nuggets	Nuggets	0.133
	Patties	Patties	0.123
	Strip	Strip	0.084
	Tenderloin	Tenderloin	0.123

Table 3: Model Fit - AIC

Range	Model Type	Model Number	Equation Number	SKUs Arrangement Configurations			
				Type-Blocked		Brand-Blocked	
				I	II	III	IV
NA	IID	Model 8	Equation 4	2947.12	5469.10	3484.37	4929.47
Local Range	Umodeled effects	Model 3	Equation 6	2945.99	5464.99	3479.06	4916.69
	Modeled effects	Model 1	Equation 8	2939.14	5465.05	3486.37	4924.75
	Both	Model 5	Equation 9	2941.69	5458.03	3480.57	4917.39
Global Range	Umodeled effects	Model 4	Equation 12	2946.04	5464.88	3479.02	4914.03
	Modeled effects	Model 2	Equation 14	2932.71	5463.82	3486.36	4924.63
	Both - homogenous	Model 6	Eqaution 16	2940.77	5470.61	3481.14	4915.35
	Both - heterogenous	Model 7	Equation 15	2932.51	5456.48	3480.77	4915.81

Note: Best fitting model for each arrangement is highlighted in grey

Table 4: Spatial Parameters

Range	Model Type	Model Number	Equation Number	Parameter	SKUs Arrangement Configurations			
					Type-Blocked		Brand-Blocked	
					I	II	III	IV
NA	IID	Model 8	Equation 4	None	0.000	0.000	0.000	0.000
Local Range	Umodeled effects	Model 3	Equation 6	gamma	**0.285**	**-0.220**	**0.379**	**0.410**
	Modeled effects	Model 1	Equation 8	rho	**0.534**	**0.590**	-0.006	0.550
	Both	Model 5	Equation 9	rho gamma	**0.610** **0.120**	**0.490** **-0.260**	-0.100 **0.400**	0.180 **0.320**
Global Range	Umodeled effects	Model 4	Equation 12	gamma	**0.250**	-0.250	**0.290**	**0.400**
	Modeled effects	Model 2	Equation 14	rho	**0.690**	**0.370**	-0.010	**0.370**
	Both - homogenous	Model 6	Eqaution 16	rho	**0.270**	-0.050	**0.196**	**0.270**
	Both - heterogenous	Model 7	Equation 15	rho gamma	**0.700** **0.270**	**0.460** **-0.280**	-0.199 **0.329**	0.100 **0.370**

Note: Best fitting model (as per AIC) for each arrangement is highlighted in grey

Table 5: Measuring the sales impact of Spatial Dependence

Planogram Type	Configuration	Spatial Signal	Fitted Values	Spatial signal as % of Fitted Value
Type-Blocked	I	12311.7	81314	15.1%
	II	20602.1	153922	13.4%
Brand-Blocked	III	8896.8	101837	8.7%
	IV	18691.3	160618	11.6%

Table 6: Increment in predicted sales based on improved arrangement

PANEL A – Unconstrained Routine

Particulars	Planogram 1	Planogram 2	Planogram 3	Planogram 4
Improvement	**14.29%**	**6.63%**	**14.26%**	**4.52%**
Elapsed Time (s)	224404.79	299468.63	77436.32	105658.44

PANEL B – Constrained Routine

Particulars	Planogram 1	Planogram 2	Planogram 3	Planogram 4
Restriction	Type Constrained	Type Constrained	Brand Constrained	Brand Constrained
Improvement	**11.13%**	**3.09%**	**10.70%**	**4.09%**
Elapsed Time (s)	95369.89	137552.51	32137.82	57630.31

Figure 1: Defining Immediate Neighborhood for an item in a Typical Planogram

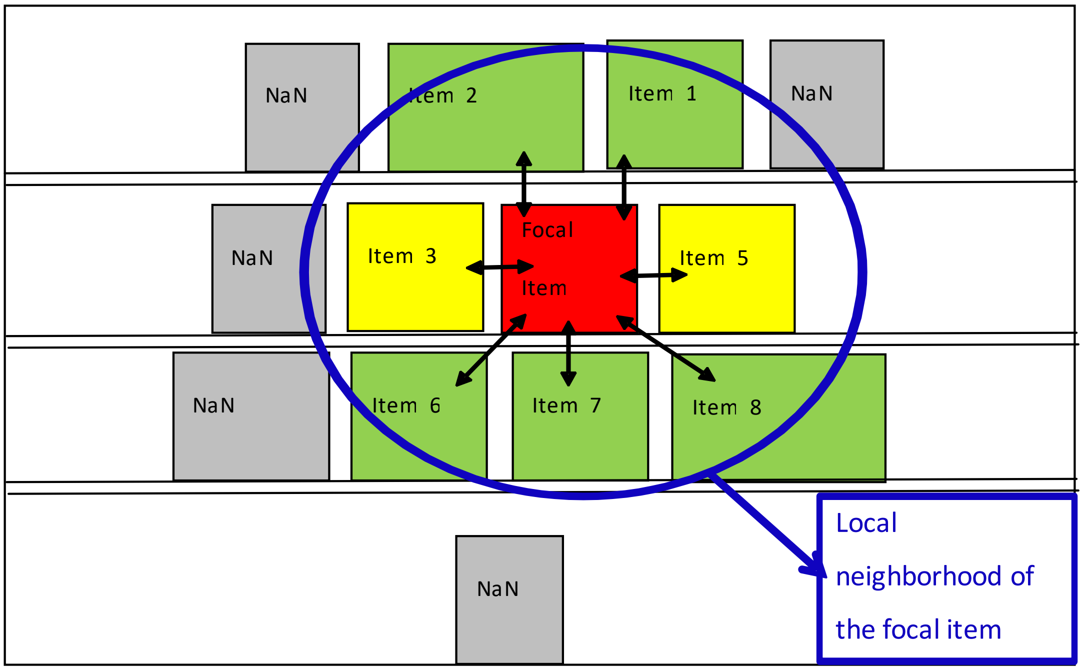

Figure 2: Illustrative Representation of Adjacency Matrix for 8 SKUs

SKU	1	2	3	4	5	6	7	8
1	0	1	1	1	0	0	0	0
2	1	0	1	0	0	1	1	0
3	1	1	0	1	1	1	0	0
4	1	0	1	0	1	0	0	0
5	0	0	1	1	0	1	1	1
6	0	1	1	0	1	0	1	1
7	0	1	0	0	1	1	0	1
8	0	0	0	0	1	1	1	0

Figure 3: Block-diagonal structure of the Spatial Weights Matrix

$$\mathbf{W} = \begin{bmatrix} \left[\mathbf{W}_{\mathrm{Store\,1}}\right] & & & \\ & \left[\mathbf{W}_{\mathrm{Store\,2}}\right] & & \\ & & .... & \\ & & & \left[\mathbf{W}_{\mathrm{Store\,S}}\right] \end{bmatrix}$$

Appendix I – Improvement Heuristic Algorithm

The improvement heuristic is run separately for each of the four planograms, once with the brand/ type constraint and once without. The algorithm takes pairs of SKUs and exchanges their position, with the pair-wise exchange running through all the possible exchanges. Since the planograms' 'best' models all act through an unmodeled effect, and this unmodeled effect interacts with the error term, we revert to a monotonic transformation of the fitted value for sales ŷ (referred henceforth as ŷ*) by multiplying both sides with $(I - \gamma W)^{-1}$, and use ŷ* as the outcome measure. Let $W_{baseline}$ be the original planogram's contiguity matrix and $\hat{y}^*(W_{baseline})$ corresponding to the original planogram be the starting benchmark. Of the n items in the planogram, let D be the set of the all (space-compatible) item pairs in the planogram. Let $W_{i,j}$ be the contiguity matrix obtained when items i and j exchange their positions in $W_{baseline}$. Then we can write our decision problem as:

$$\begin{aligned}
&\underset{(i,j)\in D}{\text{Max}}\left[\hat{y}^*\left(\mathbf{W}_{i,j}\right)-\hat{y}^*\left(\mathbf{W}_{baseline}\right)\right]\\
&\text{such that:}\\
&\text{If for any}\left(i,j\right),\quad \hat{y}^*\left(\mathbf{W}_{i,j}\right)>\hat{y}^*\left(\mathbf{W}_{baseline}\right),\\
&\text{Then: } \hat{y}^*\left(\mathbf{W}_{baseline}\right)=\hat{y}^*\left(\mathbf{W}_{i,j}\right).
\end{aligned} \qquad \text{(A1)}$$

The algorithm in (18) runs through a complete cycle of the pairwise exchanges, calculating and comparing the ŷ* for the arrangement after each exchange with the benchmark, and replacing the benchmark fitted value as well as the arrangement if the new ŷ* is superior. Thus, every time the new arrangement is superior to the earlier benchmark, the algorithm considers such new arrangement as the current optimal arrangement and proceeds to search for a 'more' optimal one. However, the order in which the pairwise exchanges occur is not pre-ordained. To surmount this issue, we perform 10,000 randomizations (representative of what can be considered a reasonably large number of runs) of the order in which the pairwise exchanges take place. And for each of this randomized order, the complete cycle of all possible pairwise exchange (as in (A1)) is run, the $\hat{y}^*$ calculated, and compared with $\hat{y}^*(W_{baseline})$ after each exchange. At the end of the 10,000 runs, we arrive at the 'best' performing arrangements that predict the highest sales (in the parameter space we have covered) due to improved spatial effects.

Chapter 3 – The Role of Ties and Indirect Customer Engagement in Channel Selection for Bottom of the Pyramid Consumers

3.1. Introduction

As investors place a premium on growth, firms have attempted to grow through entering relatively untapped emerging markets over the past two decades. While entering emerging markets, firms have typically focused on urban areas first, as these areas have higher incomes and are easier to access. Subsequently, firms, both domestic and multinational, have explored rural markets to deliver on the on-going pressure for growth. While worldwide the share of the world's population living in rural geographies has declined from over 65% in 1960 to about 45% in 2016, they still constitute a significant majority in most emerging markets. For example, the rural share of the emerging markets' population ranges from a minimum of 35% in South Africa to maximum of 79% in Cambodia[1].

A significant portion of the rural consumers in emerging market countries share two traits that have important consequences for firms attempting to market to such consumers. First, these consumers have limited formal education and hence low literacy levels (Todaro & Smith, 2009). Second, as many consumers are employed as part-time or seasonal labor, they have limited and often uncertain income[2]. While traditional consumer packaged goods (CPG) products have begun to make significant inroads into these markets, sales of consumer durables have been limited. Marketers of these products face three main challenges as a consequence of these consumer traits that limit their ability to develop and grow these markets. First, consumer

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[1] Bangladesh: 65%, Cambodia: 79%, China: 43%, Egypt: 57%, India: 67%, Indonesia: 46%, Ireland: 36%, Kenya: 74%, Philippines: 56%, Poland: 39%, South Africa: 35%, Vietnam: 66% (World Bank. Accessed at https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?year_high_desc=true on 5th February 2018)

[2] http://encyclopedia.uia.org/en/problem/145418

durable products are large ticket items and often require service unlike non-durable consumer packaged goods (CPG). Without access to credit, such consumer durable offerings are often unaffordable. Moreover, without access to installation or post sales service, the product utilization levels are likely to be low and the investment made is perceived as wasteful and thus the value proposition is perceived as unattractive. To minimize concern about the ticket price, some durable manufacturers have launched low cost durable offerings that are of poor quality with high failure rates in several emerging markets (Sturm, Njagi, Blyth et al., 2016). The implications of product failure, especially for durable products, are serious for two reasons. First, rural low-income consumers usually lack the financial resources to easily replace the failed product. Second, service providers to repair the product, even for those under warranty, are difficult to access for the rural low-income consumers. The bad experiences with low quality offerings have led consumers to distrust such products, making it very challenging for better quality and better value products to compete in the markets.

Second, in rural geographies, higher paying manufacturing or service jobs are rarely available. Consumers are invariably employed in agricultural jobs[3], either as small-scale farmers or landless (often seasonal) farm laborers. Thus, the working population faces the twin challenges of low wage income and lumpy arrivals (after harvests). Moreover, as many consumers are dependent on agricultural yields that rely on rain fed lands[4], the income also tends to be dependent on rainfall and are, thus, uncertain. The available financial resources are directed towards every day basic needs, such as food and fuel. This leaves little room for savings.

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[3]National Sample Survey 68th Round by the Government of India indicates 64% of rural population is involved in agriculture. Accessed on 5th February 2018 at http://www.mospi.gov.in/sites/default/files/publication_reports/KI-68th-E%26U-PDF.pdf

[4] As per International Water Management Institute, rain fed land accounted for over 93% of farmed land in Sub-Saharan Africa, 87% in Latin America, 65% in East Asia, and 58% in South Asia. Accessed on 5th February 2018 at http://www.iwmi.cgiar.org/issues/rainfed-agriculture/

Consequently, rural low-income consumers rarely have the incremental cash resources to purchase high ticket durable products. While financing can make these consumer durable products affordable, existing channel members are unlikely to offer financing due to two constraints. As consumers live in distant rural villages, manufacturers have limited direct access to these customers. Moreover, as these consumers have limited credit history, manufacturers do not have the ability to evaluate their credit worthiness. In the absence of financing, rural low-income consumers are less likely to purchase durable products.

Third, the low literacy rates make it challenging to communicate the value proposition of consumer durables. Not only do the consumer durable products have high up-front costs, consumers have limited experience with such products. The lack of experience, both personally as well as limited adoption by peers, limits exposure. Communicating the value through printed brochures is not effective due to the low literacy rates. Moreover, consumer durables require user education. Existing rural retail outlets that distribute CPG products do not have the resources to carry the infrequently sold consumer durables. Nor are the outlet owners likely to have the capacity to educate consumers about the value and use of consumer durables. Consequently, manufacturers of consumer durable products face significant challenges in providing rural low-income consumers with access to durable products.

The cumulative effects of high cost of *product failure*, *limited affordability* and *inability to learn about the value proposition* is exacerbated by institutional voids faced by consumers and manufacturers of durable products. Tangible inadequacies in infrastructure make it difficult to provide access to and, if necessary, service the consumer durable products of rural consumers living in fragmented locations. Intangible voids in institutions limit access to credit worthiness evaluation by firms (and thus financing) as well as access to recourse in case of product failure for consumers. Together these limit the quantity and ease of transactions as well as increase the cost of sales and service (Palepu & Khanna, 2010). Of particular focus for this study, is the absence of a robust distribution system for consumer durables in rural markets in India. The challenges faced by the consumer is summarized in Figure 1 and the challenges faced by the firm is summarized in Figure 2.

Insert Figure 1 here

Insert Figure 2 here

Given the limited literature about distribution in rural and emerging markets, especially for consumer durables, we use grounded theory-in use approach to advance our research. This allows us to study an emerging class of marketing intermediaries, whom we label non-traditional intermediaries (NTI), and better understand the role they play and the manner in which they fill the identified institutional voids in the market. Descriptions of the various types of NTIs covered by our study is provided in Appendix A.

Consumer durable firms' use of these channel partners can be perceived as an innovative business model for the emerging market. However, little systematic research has addressed the relative efficacy of channel choices in terms of product adoption and firm sales success in *low income consumer* (LIC) markets. Channel choices are important to study, as they have been shown to have the largest elasticity among the marketing mix variables in emerging markets (Bahadir, Bharadwaj, & Srivastava, 2015).

We supplement our research with the application of institutional theory (DiMaggio & Powell, 1983) to the study context to explain the emergence of a new institutional form, the NTIs, who fill the gap between the consumer durable firm and the rural low-income consumer.

NTIs are institutions such as non-profits, public service institutions, or microcredit institutions that have a local presence and have transactional history with the rural consumers. We find that NTIs enjoy higher levels of trust among the consumers due to repeated interactions as well as their local presence. This trust transmutes to legitimacy, an institutional asset that consumer durable manufacturers often lack. Consumer durable manufacturers then find it attractive to partner with NTIs to gain legitimacy in the eyes of the consumer. The NTIs, in many instances, also provide or arrange for credit for the durables, thereby alleviating the problem of low disposable income. As new firms enter the market, they tend to partner with NTIs in order to reduce uncertainty, thereby leading to growth of this channel arrangement. This, in turn, leads to channel structure isomorphism as predicted by institutional theory (DiMaggio & Powell, 1983). However, we continue to observe heterogeneity in the type of institutions becoming NTIs. The summary of how NTIs bridge the gap between firms and customers is provided in Figure 3 below.

Insert Figure 3 here

Our analysis of the theory-in use interviews and our discussion based on institutional theory also lead us to a set of ten propositions. These propositions are framed around the following four dyadic relationships: firm-intermediary, intermediary-consumer, firm-consumer, and consumer-consumer. Some of the propositions concern the capabilities of the firm, the consumers' context, and the gap between these two. Others detail the fit of the NTI for addressing this gap and the consequent enablement of business between the consumer durable manufacturers and rural low-income consumers. The rest detail the factors that affect the willingness of the NTI to partner with the firm.

In the following section, we discuss the literature related to low income consumers, channels in rural and emerging markets, consumer durables marketing, trust, ties, and institutional voids. In Section 3 we describe our method and its appropriateness in the given context, the key actors, data, and analysis approach. In Section 4, we discuss the conceptual mechanisms that drive the firm-NTI partnerships based on our research. Subsequently, in Section 5, we lay out propositions based on our findings. We conclude in Section 6 with a discussion on our findings and suggest future research.

3.2. Literature Review

Established firms, while promoting a new product to the urban middle class, can rely on traditional marketing approaches such as written communication and conventional channels, leverage its umbrella brand (which is likely to have significant awareness among potential consumers), and capitalize on its established customer engagement. On the other hand, the bottom of the pyramid (BOP) consumers in developing countries throw up unique problems for firms (Sheth, 2011). First, firms, typically, do not have established infrastructure in terms of channels or channel relationships to reach consumers in rural and urban low-income housing areas or slums (Kumar, Sunder, & Sharma, 2014). Second, the BOP consumers are a separate segment with a unique set of characteristics (Prahalad, 2006; Sheth, 2011), which includes high levels of illiteracy (Viswanathan et al, 2010), lack of exposure, and budgetary constraints (Layton, 2011; Chakravarthy & Coughlan, 2011). Consequently, a firm well-established in urban and higher income markets is likely to face significant challenges in attempting to introduce the same product among the BOP consumers.

Prior research has shown that illiteracy among the BOP consumers results in their relying primarily on word of mouth to access information prior to purchase (Viswanathan et al., 2007).

Because of the budget constraints that BOP consumers face, product failures and errors in purchase decisions are very expensive (Mani et al., 2013). Therefore, the social ties that they share among themselves channel the trust and knowledge about product choices through word of mouth (Viswanathan et al., 2007).

Given the above described BOP context, it is not very surprising that firms would find it more challenging to operate sustainably in the BOP market. While recently there has been a number of new ventures with products designed, built, and priced for the BOP markets (Weidner et al., 2010), anecdotal evidence suggests that they too have difficulty in overcoming the illiteracy, low exposure and budgetary constraint challenges. On the other hand, firms operating in these markets, estimated to be about 1.4B people living on a \$3-\$5 spend a day and an additional 1.6B living at \$1-\$3 a day, find it too large to ignore and consequently appear to be experimenting with alternative marketing approaches towards this market (Rangan, Chu, & Petkoski, 2011). These BOP consumers, who live on a PPP adjusted \$2,500 per annum, form subset of the Low Income Consumers (LIC), who have a PPP adjusted income of \$10,000 per annum[5]. As a whole, the LIC and its subset of BOP, forms a large and attractive market, if the firms can deliver cost effectively. However, to the best of our knowledge, the solutions to these challenges have received limited attention in the academic literature.

Firms marketing products to the BOP segment have been experimenting with what the academic literature identifies formally as customer engagement and social ties. However, the manner of leveraging on customer engagement (van Doorn et al., 2010) and on social ties in the BOP markets is distinct from traditional high-income urban markets.

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[5] A.T. Kearney report titled 'Serving the low income consumer'. Accessed on 15th August 2018 at https://www.atkearney.ca/documents/10192/314765/ServingLow-IncomeConsumer.pdf/343423c1-7053-45e8-8ab2-0d4b9cedb7a2

Recent research finds that distribution has the largest impact among the marketing mix elements in driving sales growth in emerging markets (Bahadir, Bharadwaj, and Srivastava, 2015). While the role of intermediaries is an established phenomenon in marketing, we look at contexts where these intermediaries are not the conventional or traditional choice for firms. They are unlike commercial entities whose primary objective is to act as a sales and distribution partner. Even among the few intermediaries that transact commercially, the product category of consumer durables, the focus of our study, is far removed from the usual products or services they deal in. We term these emerging channel members as non-traditional intermediaries. We use the term intermediaries or the abbreviation NTI henceforth in this document to refer to non-traditional intermediaries.

We propose that the engagement between various actors in each channel is a function of the interplay of different dimensions of ties and trust (Johnson & Grayson, 2000) as shown in Figure 4. This classification fits well for this study's context wherein we try to unpack the mechanisms or processes involved in the multi-channel relationships involving firm-intermediary-customer-peer linkages.

< Insert Figure 4 here>

Generalized trust is the trust that emanates from the social norms or from the general expectations of behavior of people (Coleman, 1988 and Fukuyama, 1995). This is the kind of trust that determines, for example, whether a bag can be left unattended for a few minutes in a public location in a certain city or not. System trust is the trust that is based on an actor's belief in the recourse to contracts, law, regulations, and governance mechanisms (Citrin, 1974). The more the actor believes that agreements are enforceable, the greater is the system trust. Process based trust is developed as a result of repeated interactions between two parties. Past experiences in interactions lead to a certain level of trust and is usually tacit (Zuker, 1986). Personality based trust operates at an actor level and is determined by how trustworthy a person is, independent of the other dimensions of trust. It is a function of an individual's personality traits (Rotter, 1967).

We draw on the ties literature to distinguish the different dyads in each of the multi-channel based on the following dimensions. First, the strength of ties is classified as strong or weak. Strong ties represent frequent and intensive communication, while weak ties typically represent infrequent interaction among dyadic members. The former, though, provides relatively little new information or knowledge while the latter provides an avenue for non-redundant information and new knowledge to be shared among members (Granovetter, 1973). The next dimension is based on the appropriability of resources - single and multi-resource ties or simplex and multiplex ties. That is, dyadic members access only one resource through the tie or have only one type of relationship with the dyadic members. (e.g., only friendship tie or having an investor-investee relationship). Alternately, dyadic members access multiple resources through their relationship (e.g., investor-investee as well as vendor-buyer relationship) (Oh et al., 2004; Tuli, Bharadwaj, and Kohli, 2010). Finally, we classify ties based on the role of a 'friend' or of a 'businessperson' (Wathne & Heide, 2004). In the 'friend' mode, decisions are taken by dyadic members based on 'appropriateness' and (social) 'rules'. In the present study's context, typically friendship ties provide access, important information, and facilitate ease of regulatory clearances. In the business mode, decisions between members are taken based on 'consequences' and 'incentives' and generally this provides professional networks and resources.

We draw upon the afore-described literature on trust, ties, institution voids and the context of the BOP customer in emerging markets to understand the emergence, suitability and sustainability of the non-traditional intermediary as a channel partner. While we have seen that there is research in each of the individual streams that we have discussed, there is scant understanding about the non-traditional intermediaries themselves. Thus, our research uses a grounded theory-in-use approach to address this gap in the literature.

3.3. Theory-in use Methodology

The literature on non-traditional channels or alternative channels in the emerging markets is sparse. Given the limited amount of systematic research, we adopt a discovery-oriented, theory-in-use approach, which helps uncover insights from the field (Zaltman, Lemasters, & Heffring, 1982; Kohli & Jaworski, 1990; Tuli, Kohli, & Bharadwaj, 2007; Challagalla, Murtha, & Jaworski, 2014). We conduct a series of interviews with (a) senior executives in firms involved in BOP marketing, (b) representatives of NTIs, and (c) Low Income Consumers (LIC) including peers. Please refer to Appendix B for the interview guides. While there is some preliminary anecdotal information available through published cases, white papers, and news articles, the interviews we conduct provide in-depth insight into (1) the theoretical relational process between firms and partner organizations, (2) the perceived risks and rewards considered by the partner institution while entering into a relationship to promote products that are not traditionally in their domain, (3) the role of trust and other behavioral aspects among partners, (4) consumer's perception and behavior towards the various customer engagement activities of the firm and its partner institution, (5) whether the end-consumers' trust with the intermediary translates to trust with firms and its offerings (social contagion effect), and (6) the criteria used by the actors – firms and intermediaries - to arrive at the choice(s) of channel arrangements.

Our choice of the primary research context was motivated by India being a microcosm of the global emerging rural market. India has a diversity of languages, infrastructure, and wide disparity in income levels and living standards. India has 22 official languages[6], 99 other languages that have more than 10,000 speakers and 19,448 other languages and dialects[7]. In terms of infrastructure the disparity can been seen in terms of highways per 100 square kilometers ranging from 11.17 kms in Kerala, to 8.12 kms in Tamil Nadu, to 5.41 kms in Haryana, with Odisha trailing at 1.95 kms. The extent of diversity in infrastructure is also reflected in the disparities in per capita consumption of electricity, which ranges from 1,663 kWh in Punjab, to 873 kWh in Karnataka, to 372 kWh in Uttar Pradesh, to 117 kWh in Bihar[8]. A McKinsey report finds that the state of Maharashtra with a population of 128M is expected to have purchasing power parity (PPP) similar to Brazil, while, another state, Tamil Nadu's PPP can be compared to South Africa, Puducherry to Panama and Goa and Chandigarh to Spain[9].

We blend the interviews with extant theory on social ties and customer engagement literature, thus, grounding our research in both academic and managerial relevance. Insights from both theory and practice serve as basis for developing our theoretical framework. We use this approach because it has proved effective in emergent research domains (Tuli, Kohli, and Bharadwaj, 2007; Challagalla et al., 2014). By supplementing the theoretical perspectives with in-depth interviews of managers and other actors, we gain richer insights into the potential benefits and costs of utilizing the various options to reach BOP customers.

[Insert Table 1 here – Interviews Summary]

[Insert Table 2 here – Sample Characteristics of Respondents]

[6] https://mha.gov.in/sites/default/files/EighthSchedule_19052017.pdf
[7] http://censusindia.gov.in/2011Census/Language-2011/General%20Note.pdf
[8] http://www.nipfp.org.in/media/medialibrary/2016/04/WP_2016_164.pdf
[9] Understanding India's Economic Geography, McKinsey Quarterly (2014).

Our study points to three key actors in the emerging markets; the consumers, the firms, and finally the intermediaries that serve as a bridge between the consumers and firms in more ways than one. The models that we find emerging in our study evolve from interactions between the three actors and attempt to overcome various constraints in the respective environments of the actors. We provide a description of the characteristics and constraints of each of the three actors below and then discuss the mechanisms that govern the emerging B2B models that connect the firm to the consumer through the intermediary. These mechanisms are three in number, viz. Distribution Capital, Social Capital, and Financial Capital, and are discussed in Section 4.

3.3.1. Key Actors

3.3.1.1. Consumers

Low Income Consumers (LIC) face multiple constraints in their lives. They have limited, uncertain and irregular incomes, as often the LIC work in temporary jobs as daily wage laborers or are as marginal farmers. The uncertainty in income arises from not knowing whether temporary jobs would be available on a day to day basis or not. It also arises from marginal farmers being dependent on the vagaries of the monsoon for their cultivation. On the other hand, the irregular nature of income arises primarily from it being linked to harvests. This leads to significant fluctuations in cash available on a day to day basis. These two factors combined lead to a situation where the LIC have limited financial resources and large number of competing needs. This becomes clear from the following quote from a LIC from Karnataka state.

> People around here have less income and they have to cover all the expenses of running the house and everything in that meager income and some are already paying installments for loan they have already taken, so many hesitate to buy these products.

Any expenditure that they make that results in a product or service failure has a more severe impact in terms of not only the value lost in the product or service but also, psychologically, in the opportunity foregone to allocate the money for the failed expenditure. Thus, with a high cost of failure, the LIC are *risk averse*. This risk aversion manifests itself in the form two important characteristics, namely the general lack of trust in outsiders and outside organizations, and the increased need for performance guarantees for product and services. The lack of trust, prior bad experiences, and the risk aversion is summed by the following quote from LICs.

> So many businessmen are cheats. They will sell the product and go away from here. Thereafter they will not return to this place. Then what we will do when problems arise?
>
> \- Low Income Consumer from Karnataka

The causal path can thus be traced as follows:

Limited/ Uncertain/ Irregular Incomes → High Cost of Product Failure → Risk averseness → Lack of Trust & Need for Performance guarantees

Even if the consumer attempts to bridge the income with external credit, they face three major constraints. First, the limited, uncertain and irregular income make the LIC a poor credit risk. Second, the general lack of identity documents means that most LIC don’t have access to affordable and accessible credit. This issue arises because formal lending organizations require identify proof, income proof and address proof documents that are from government or other authentic sources in order to open an account and lend money. However, such documents are difficult to procure for the LIC due their low social status, low power, illiteracy, and general lack of access to bureaucracy due to geographic distances. Third, the fragmented and remote nature of their geographic location limits easy access to formal financial institutions in the vicinity.

Our study also finds that LIC have limited exposure compared to their urban counter-part. Low education levels among the LIC limits exposure. Low education levels also result in limited ability to assimilate information available in the written format. Thus, the LIC have limited exposure to products, and limited ability to evaluate products. This further feeds into the general lack of trust of outsiders. Interviews also point to customer experiences with unscrupulous vendors in the past where the vendors have been fly-by-night operators leaving the villagers with poor quality products. Thus, the vendors have also not proven to be trust worthy in the past as can be seem from the words of an LIC from Andhra Pradesh.

> He made many tall promises. He said, “I’ll give all items”. I didn’t know him. I went to him with reference from an acquaintance. I went to him on that ground of trust. But, he conned me and didn’t provide service as promised.

Another effect of the LIC’s limited exposure is that the need for many of the products being offered by firms is latent. As an illustration, consider a firm that sells affordable water purifiers in geographies with unclean drinking water. Due to lack of exposure, the consumers do not feel the need to consume safe drinking water. Thus, the firm has to start with generic promotion of water purification to create a felt need for the product before they can promote their brand of water purifier.

The LIC numbers is quite sizeable, leading to the popular notion that a fortune exists at the bottom of the pyramid (Prahalad, 2006). However, the geographic spread of these consumers poses a logistical problem. In the case of India, these consumers are spread across 600,000 villages. For most firms, creating and maintaining a distribution network over such a large number of points in economically unviable. The geographic spread of these LIC also increases the logistics costs for the firms in the points where they operate.

3.3.1.2. Firms

Firms entering the bottom of the pyramid markets face significant challenges, partly due to the consumer side issues described earlier and partly due to environmental factors. They are perceived as not being trust worthy either due to their simply being a new entity in the village or due to the LIC's past negative experiences with firms or both. This trust barrier is significant and is the most difficult one among the constraints to overcome. Without a basic level of trust, the firm cannot even communicate to the LIC. In addition, the firm does not have a way of signaling a recourse mechanism to the consumer in case of product failure in the future. The LIC, who has limited exposure is ill-equipped and averse to seek legal means of recourse, which in emerging markets have significant friction costs (Mani, Mullainathan, Shafir, & Zhao, 2013).

A second characteristic of the consumer that poses a challenge to the firm is the geographic spread. Firms typically do not have the last mile connectivity to service the consumer. The established distribution network usually stops at the large town level in most emerging markets. Deepening the network further into the rural is expensive and difficult. The costs of maintaining the network are large and firms may have to continue operations for many years before these networks become profitable, if at all. An allied concern to this is the cost of logistics in the areas where the firm has extended reach. The cost per item sold increases significantly due to the additional transportation cost for low volumes. In addition, where items are distributed on credit, collecting the payments for small volumes is costly.

The firms also find that, after crossing the trust and the logistics barrier, they are faced with LIC who have limited purchasing power and limited access to credit. The firms, usually manufacturers, have neither the experience nor the expertise in extending products on credit to LIC. The LIC operate in the informal economy and as such do not have credit history or credit scores. Even for a firm that is willing to extend products on credit, the lack of information about credit worthiness of the consumer poses an additional challenge.

Firms additionally face other environmental constraints such as poor infrastructure. Road connectivity is generally poor, electricity supply is unreliable, and financial institutions may not be available in the local vicinity. All of these drive up the cost of operations.

Finally, firms are also constrained by the paucity of expertise and experience in operating in the BOP markets. This is both at the level of the institution and at the level of employees with such experience and capabilities.

3.3.1.3. Intermediaries

The constraints and challenges described above for consumers and firms result in a gap that divides the two actors. Our study finds that it is possible for non-traditional intermediaries, or intermediaries as we will refer to them, to bridge this gap due to their key characteristics.

Intermediaries are institutions that function in the local geographies of the consumers and have either had direct interaction with the consumers or the community that the consumers belong to in the past. Typically, these intermediaries are not for profit institutions or are double or triple bottom line institutions with a goal of achieving social outcomes for the community that the consumer belongs to. Thus, the past interactions and the intermediary's goal place it as a trusted organization in the minds of the consumers. This helps overcome the trust barrier.

Many of the intermediaries are microcredit institutions and have a history of providing loans to the consumers. This places them in an advantageous position vis-à-vis assessing the credit worthiness of the consumers for product loans. Even in cases where the intermediaries are not financing institutions, the long history of interactions and the ties that they have developed with the consumers and their community permits them to assess the risk of extending credit and also provides them with social capital to recover the loans.

Finally, the intermediary is already operating in the local geography. Their experience of operating in the local area provides them with institutional and individual capabilities required for succeeding in these markets. Adding on additional line of work in terms of promoting or selling the firm's product will only result in a marginal increase in their operating costs compared to the potentially unviable costs of the firm setting up greenfield distribution network.

In the next section, we describe the mechanisms employed by the intermediaries, along with the customers and firms, in order to evolve models that bridge the gap in the bottom of the pyramid markets.

3.4. Conceptual Model

The solutions to the challenges and constraints described in the earlier section can be summarized in three broad categories: (1) distribution capital, which is the capability of the intermediary to operate effectively and efficiently in the BOP markets, (2) social capital, which is the availability of a mechanism to create credible word of mouth and also to act as collateral for unsecured credit, (3) and financial capital, which is the availability of finances as well as the capability to extend and recover micro loans for products. These are discussed in detail in sub-sections 4.2 – 4.4. One of the sources of these forms of capital is the trust in the dyadic relationship the customer and the intermediary, which itself is linked to the ties between these actors as well as the ties among customers facilitated by the intermediary.

3.4.1. Trust

Generally high levels of trust are observed between the customer and the intermediary. The high levels of trust between both the entities are formed due to three important reasons. The first is that the intermediary is involved in protecting the interests of the customers. The second is the involvement of the intermediary in conducting social programs for the customers/ beneficiaries, such as health camps and job fairs. The third is the platform for networking that the intermediary provides through its groups. These benefits are detailed below.

<u>i) Promoting interests of customers</u> - Consumers in the LIC markets are particularly sensitive to their interest being protected. This results from multiple constraints that the LIC operate under, including low literacy levels, high costs of failure, general apathy of the authorities, etc. They tend to engage with individuals or small shops that offer them this sense of security. Consumer from a south Indian state says:

> I have trust on (MFI). Whatever I have bought till today from the (MFI) is in good condition. With that trust I didn't think twice before buying this solar light the minute I heard about it. I gave the application and got it within a week's time and the company came and installed it as well.

An MFI or an NGO often times provide the LIC with this sense of security and attachment, which results in development of trust between these two entities. They negotiate with firms on their customers' behalf to bring their customers the products that they need at the best possible rates. They also inform the LIC of new product offerings. In the presence of intermediaries, due to the trust, customers are willing to buy products. The intermediary acts like a secure advocate in between. The senior project manager of a large NGO:

> Initially you have to build the trust. We are company and you (the MFI) are supporting your women. If the microfinance company sells through peers selected from your village, you are supporting your women and they become energy agent in your village. Some people liked the idea and they took it and some gram panchayat (village governance) members started purchasing. That way it spread, and they were supporting women. The villagers feel that it is our village and we will support our women and they will earn Rs. 20 (~US$ 0.30) commission. We had given on instalment basis also as one-time payment will be difficult for them.

Firms recognize and understand the lack of trust and the sensitivities of the LIC. Their propensity to partner with intermediary organization is driven by this understanding.

ii) <u>Conducting Social Programs:</u> A socially concerned intermediary conducts programs for empowering its customers. These include medical camps, sensitization campaigns, and woman empowerment programs. The intermediary does this as part of their objectives. The social focus of the intermediary reinforces the trust of the customer in the intermediary. The customer is reassured that being a member of the intermediary is to her benefit. Such acts can also signal to the firms that the intermediary would be amenable to spreading awareness about its products. A LIC described the benefits that the intermediary provides:

> The intermediary has this program called 'Deepa' every month with yoga camp. They also give a health card in with which we can get an operation done for free. The patient is picked up from their house and food and other expense are also taken care of.

The intermediary provides these additional benefits and services not only to fulfill its social objectives as per its charter, but also to enhance its own sustainability. A microfinance organization that organizes health camps, job fairs, or provides scholarships to customer's children is creating a more engaged customer, who then not only has higher propensity to repay the unsecured loan, but also is likely to return to the same organization for her future credit requirements. The product manager of a leading MFI shared the following activities that the MFI does as part of its social programs.

> We do conduct regular medical camps for all members and sometimes even our non-members. We also conduct job employment fairs. There is also a helpline that we started for medical queries our members, where they can contact and get clarification.

Firms are also aware of the conduct of these activities by the intermediary. In fact, firms that have products requiring generic promotion of the concept (such as why smokeless stoves are beneficial to the health of the person cooking the meal compared to the regular firewood stoves that generate a lot of smoke), would recognize these activities by the intermediary as an opportunity to generate awareness about their product. The manager of a firm says:

> This project is being sponsored by our CSR. The intermediary promotes awareness in terms of sustainable and proper uses of drinking water. So, this is basically project funded under the partnership.

iii) <u>Social Networking:</u> Intermediaries provide a forum for healthy interactions and discussions to take place between the members. Through these interactions, the members are able to form strong networks in their community and are socially connected. Member of an MFI says the following about her social network formed through her participation in the MFI's offering:

> When we formed this MFI group we got acquainted with other ladies. When we go to the joint meetings we all go together. Now I know these are my friends who will support me and help me if I have problems. We all stand united.

The intermediary benefits from increased social interactions among the customers, especially where the intermediary is a microfinance institution. The unsecured loan model of microfinance relies on the mutual guarantees provided by group members for the repayment of loans. Thus, a more cohesive group leads to lower number of defaults.

In addition, the firm benefits from greater social interactions among the LIC. This is because of the importance of word of mouth as an advertising medium among this segment. Given the low literacy levels and general lack of trust on outsiders and outside institutions, word of mouth assumes significance as a medium of product and brand awareness. Increased social interactions facilitate this. The COO of a social venture has the following to say:

> The retail does not have a deep connection with the local people. However, if have an MFI or NGO or a cooperative, connect between the costumer and this kind of a partner organization is quite high. So, financing as well as connect are typically seen as being instrumental to actual sales of the product.

3.4.2. Social Capital

Social capital forms an important asset among this target segment. It allows people to borrow and lend, provides the basis for an information sharing network, provides references, etc. In a context where the consumers do not have access to formal infrastructure for most of their needs, the social capital that they build supports the informal solutions.

Intermediaries bring new customers into their fold through a process of referrals. In various interviews it was seen that close acquaintances had referred the new member to the intermediary, and the new member had also joined the intermediary on the recommendation of an acquaintance. This brings in a personal dimension into the referencing process. Customers also provide word of mouth publicity for products and services offered by third parties. A recommendation resulting in positive outcomes for the recommended adds to the social capital of the recommender.

Consumer of a product bought in the rural has the following to say about how his peer influenced his decision on which company's product to purchase.

> There are several companies which sell this product. He (friend/acquaintance) said (this company) will be better. What do we understand about a company? Since, we belong from the same village I asked him (friend/acquaintance) to identify the one that he feels is best.

In the environment in which the intermediary is operating, social capital of the consumer tends to be a strong substitute for financial capital. Microfinance institutions providing loans rely on the social capital of the members as a security mechanism; default by one member results in the remaining members of the group having to pay for the defaulter and the defaulter would have to pay back her group members in order to preserve her social capital. Haldar and Stiglitz (2016, p.482) point to the importance of social capital being at the core of joint liability mechanism

> *We contend, instead, that it is social capital—broadly interpreted in terms of human altruism and reciprocity—that was the main factor that accounted for the triumphs of the Grameen version of microfinance in Bangladesh. In adjudicating between the*

"economic" and "social" accounts of microfinance, the litmus test was the formal shift by Grameen and other first-generation MFIs from group to individual lending: with no impact on repayment rates. But, equally, evidence in favor of the social account is provided by the devastating impact of the rapid replication of SKS on repayment rates: demonstrating that the formal application of joint liability—in the absence of social embeddedness—is simply not a sufficient condition for the working of microfinance.

3.4.3. Distribution Capital

The intermediaries involved in partnerships with the firms provide the firms access to, what we term as, Distribution Capital. In the unique context of emerging market, the firm relies on these intermediaries to provide the distribution support either partially or at times completely. We define distribution capital as an intangible asset created by the intermediary organization through a process involving the building of a network of personnel and presence in particular geographies, using the network and presence to build a platform consisting highly engaged customers, and offering this platform to firms to potentially market their products. We view distribution capital as consisting of the following: (1) Trust of the customer on the intermediary, (2) concentrated customer catchment areas where there are a large number of customers in a small local geographies, (3) availability of many such catchment areas or local geographies, and (4) trained and incentivized network to support the distribution and marketing operations.

3.4.4. Financial Capital

Majority of the customers in the bottom of the pyramid market are severely constrained in their asset ownership as well as access to financial capital. Due to their predominant participation in the informal economy, their income being largely dependent on agricultural income is also not regular and predictable. Due to lack of identity documents and not being part of the formal economy, it becomes difficult for them to access the banking infrastructure. Intermediaries often step in to address this gap and leverage the social capital[10] of the customers as security for their lending.

The financial ties of the customer and the intermediary are developed through the following methods.

i) Credit Access**:** Usually, customers who do not have access to collateral are associated with intermediaries. These customers do not have access to formal lending sources. Development of credit ties between the intermediary and customer increases the customer's trust on the intermediary. He is more willing to buy products recommended by the intermediary as it has provided him with access to finance that he lacked. The access to credit improves the consumer's consumption choices and/ or allows him to improve his livelihood. Customer of an MFI explains the relative advantages of taking a loan from the MFI compared to alternate financial institutions (banks and money lenders).

> We have been taking loans and repaying them promptly after becoming a member in this MFI group. And that it has been very useful to lead a good life. To take loans outside, either in a finance company or a bank, the process is very not easy and they make run from pillar to post asking for various documents. But in the MFI, loans are sanctioned easily on the surety of the group members.

The intermediary, where it is a microfinance institution, provides non-collateralized loans to the members. This is the main objective of the microfinance institution; to help improve the

[10] In India while this is done formally through the a credit ratings agency (https://www.thehindubusinessline.com/money-and-banking/In-a-first-MFI-customers-to-be-given-credit-scores/article20696730.ece), China has turned to 'social ratings' through WeChat and Alibaba (https://www.bbc.com/news/world-asia-china-34592186)

standard of living of the LIC through loans for income generation activities. Since it is already in the sphere of lending to the LIC, extending micro-loans for purchase of products is seen as a logical next step for the microfinance institution.

Where the intermediary is not a microcredit institution but is an NGO or a public-private partnership, the intermediary provides support for access to subsidies and credit facilities through its institutional networks. This helps the LIC access financial capital with the help of the intermediary. The manager of an NTI that had tie-ups with a MFI for financing says:

> We are giving them a finance option and in the market for the renewable energy products the initial cost is very high. But here we are giving them an option of paying off the cost of the product over several weeks and MFI is providing them a finance option.

For the firm, the ability of the intermediary to support the LIC with access to finance, either directly through their lending activities, or through partnerships with other institutions is of vital importance. The firm's ability to sell its products is directly tied to the LIC's access to finance as the LICs operate under severe financial constraints.

ii) <u>Provision of employment opportunities</u>: Intermediaries provide customers with employment opportunities. In the case of rural communities where adequate employment opportunities are not found, this can provide the customer with a steady income/cash flow. The customers not only turn to intermediaries for financial capital, but also for potential livelihood enhancement opportunities including job fairs and skills workshops. The customer of an MFI puts it as follows:

> If we are interested in learning some skills such as tailoring, they give such trainings. In a nearby village agricultural equipment are available on rent. As we are members of the

> MFI, if we show them our MFI ID card they provide us equipment on rent for a discount. The MFI's support is very useful.

The intermediary works with the LICs with the objective of improving their standard of living. This requires not only financial capital that can help the LIC with the money needed to start up a small business, but also access to skills needed for the business. These skills could be hard skills such as learning how to make candles or incense sticks, or soft skills such as how to sell their products and how to manage their money. A loan officer of a large MFI has the following to say about how they had appointed an MFI member to sell solar lanterns to her peers in the village.

> She (the appointed customer) sells on need basis; if there is need customers will purchase the lantern, otherwise they will not and that is the reason for our terming it as part time enterprise. She does tailoring and part time she sells the solar lantern. We told her that there are so many people who come to give clothes for stitching; show the lantern to them, you don't lose anything. Even if they don't buy now, you will lose only 5 minutes of your time, but you will convey the information and one day she may remember and come back to you to buy the product. There is also no target pressure.

3.4.5. Partnership Challenges

The mechanisms elaborated above can provide solutions to the challenges in the BOP markets. However, the use of intermediaries as channel partners is not without challenges. Finding an intermediary that scores high on trust, distribution capital, social capital as well as financial capital may not be possible in all geographies. Once a suitable intermediary is found, the challenge lies also in finding common grounds for a partnership that will fulfill one or more core objectives of the firm as well as the intermediary. Finally, the partnership would not be part of the core operations of the intermediary and this can lead to dilution of focus on the partnership, to the detriment of the firm's interests.

3.4.6. Institutional voids

Institutional void refers to the lack (or absence) of intermediary system such as distribution infrastructure, regulatory systems, and enforcing mechanisms to efficiently connect consumers and firms. Emerging markets are replete with these voids and portray a typical marketplace. This challenging context creates obstacles and hamper economic exchanges in product markets. Developed markets have both formal institutions that include laws, regulatory mechanisms, and processes that monitor and enforce, and informal structures that include norms, beliefs and values that guide market behavior and outcomes (North, 1991). These institutional forces are relatively stable and determine socially acceptable actions and outcomes in developed society. However, in developing economies like India, though there are formal and informal institutional mechanisms, in rural/ BOP markets populated by LIC, the institutional forces at work are predominantly localized and informal in nature. Studies have documented the differences between developed and BOP markets and have investigated the challenges faced by multinational enterprises in entering and serving LIC. This difference creates what is referred to as institutional distance for firms trying to exploit opportunities in emerging market (Webb et al., 2009). As institutional distance increases, firms' ability to understand the LIC market decreases leading to inefficient business process and unprofitable product market strategy. Furthermore, within India there is significant institutional distance between the BOP and urban markets as well, characterized by poorly developed or nonexistent infrastructure across roads, media, and transportation. These voids pose major challenges for managers in designing their marketing mix decisions.

According to Khanna, Palepu, and Sinha (2005), understanding these voids – and learning how to work with them in specific markets – is the key to success. In our context, our research finds that the intermediary possesses the necessary attributes to step in and reduce the institutional distance and bridge the institutional void. The intermediary possesses the distribution capital to bridge the last mile, whether in the physical sense or in the information sense. The intermediary has access to financial capital either directly or through tie-ups, which bridges the lack of access to product credit through formal institutions. Finally, the intermediary has, for itself, the social capital arising from the trust that the customers place on it and enhances the formation of social capital among the customers. This leads to bridging of the institutional voids with respect to lack of recourse and lack of access to credible information.

3.4.7. Integrating the Mechanisms

NTIs relationship with LICs over a long duration helps develop strong social ties with them. Such ties serve the NTI as a source of information, a channel for knowledge transfer, and as an informal influence mechanism (Adler & Kwon, 2002). The social ties between NTI and LIC establish a two-way learning process between them leading to a greater understanding of LICs' behavior during purchase, consumption, and post-consumption. This understanding about the LICs' consumption journey provides the NTI with deep knowledge of these consumers and their habits. Thereby, they get deeply involved with consumers and in return consumers are willing to learn about new products and services that are of use to them. Over time, this informational exchange develops into a strong bond between them whereby NTI develop multiple ties with them. First, the primary relationship revolves around deep understanding of LICs' changing behavior and habits to support them with welfare products. Second, by involving in LICs' social activities, NTIs actively participate in contributing to community needs, thereby developing community cohesion. Third, being receptive to LICs' problems and supporting them with solutions by working together with firms, thereby developing trust and a sense of safety. Thus, NTIs develop rich social capital with LICs that extends beyond satisfying their purchase needs (transactional motives) and contributes to their overall household and community wellbeing (welfare motives).

Another important aspect of the social ties between NTI and LIC is the aspect of knowledge transfer. It is almost impossible to get a deep understanding of the LICs' world from the usual sources of intelligence like market research data and store purchase data. Often these are unavailable. NTIs fill this critical void through their experiential knowledge gained through serving the LICs. The knowledge of LICs behavior and their social, cultural, and economic context is tacit and can be understood only through embedding and immersing into their social system. NTIs long-standing relationship and activities in the LICs' market equips them with this social embeddedness that captures these subtle signals about LICS unique behavior and actions. Over time, through repeated observational adjustments in their interaction with LICs, NTIs have an informal documentation of this rich knowledge about LICs and their marketplace. Firms do not have this knowledge and hence are willing to partner with NTIs who act as knowledge bridges, helping firms gain this knowledge to become competitive in complex and challenging LIC environment.

Finally, the social ties nurtured and maintained by the NTIs as a source of valuable information and tacit knowledge is appropriable only when it is utilized for a useful purpose(s) (Coleman, 1988). To make these ties useful, firms have to invest resources in building a structured platform wherein they can collaborate with NTIs in serving LICs needs. Specifically, firms have to drive collective action for beneficial outcomes for the tri-party – LIC, NTI, and firm. These benefits do not automatically emerge and involves firms' systematic actions in collaborating with NTIs for catering to LICs. Through NTIs, firms become cognizant of LICs marketplace and their behavior and initiate steps that will help them reach LIC through NTIs. Once a platform is built and set into action, firms develop formidable capabilities by appropriating the invaluable social ties between NTI and LICs. These capabilities provide them with significant competitive advantage over rivals who do not have this connection with NTIs.

LICs actions like purchase and consumption pattern are embedded in the cultural and institutional context of their community. Hence is it important to appreciate that though it may appear that NTIs social ties with LICs is all that is needed to drive purchase behavior, it is still a superficial understanding of their marketplace behavior. The key driver of building such social ties is still the cultural influences and the shared moral order within their community. Hence ties by themselves are not the means in driving behavioral impact. Therefore, NTIs role is very critical in driving impact as they have immersed themselves within the LICs' community to become a member of it thereby building the 'we-feeling', which provides them with community solidary, trust and influence. These ties are built and driven by a feeling of oneness that is beyond just economic or instrumental motives, which are short-lived. The duration of the social capital built between the NTI and LIC are many times inter-generational and passed along as the household and community matures. This long-term relationship develops the necessary social skills that are required and utilized by the NTIs to induce cooperation in interaction with LICs. In summary, the socio-institutional system constructed by the joint efforts and interactions of NTIs and LICs is unique and fills the institutional void that is prevalent in LIC marketplace. There are three key functions that social capital plays in such environment: (1) socializing consumers, cultivating their interpretative frames and facilitating identification; (2) mobilizing LICs and their communities; and (3) shaping LICs' decisions on purchase, consumption and general well-being

A summary of our findings in terms of mechanisms is provided in Figure 5 below.

Insert Figure 5 here

3.5. Propositions

The mechanisms mentioned in the prior section lead to a set of ten propositions that span the dyadic relationships between firm-NTI, NTI-customer, firm-customer, customer-peer.

NTI filling institutional void: Trust between NTI and customers. The LIC are risk averse, given the high cost of product failure. LIC's skepticism towards durable product offerings is compounded by their prior experience with counterfeits. Their lack of exposure also results in their unwillingness to trust outsiders, a lack of generalized trust (Layton, 2011; Chakravarthy & Coughlan, 2011). However, the representative of the NTI, who often belongs to the same community as the potential LIC, has been interacting with the LIC over a prolonged period and has gained process trust (Zuker, 1986). On occasion, when the NTI has provided unsecured loans to the LIC, the trust is enhanced. This makes the NTI a trusted entity in the eyes of the LIC. An LIC, who is member of a large MFI, articulates this in the following manner:

> We need guarantee on the products manufactured by the firms. If they approach us directly, how can we trust them? Now that we have the company guaranteeing through the NTI, we can rest easy if we purchase the product through the NTI.

This trust helps convert the social capital into economic capital as it enhances the purchase likelihood among the LIC. A case in point, is a LIC, who is a member of a different MFI, talking about her experience of purchasing a solar lantern through a partnership arrangement between the firm and the NTI.

> I have trust on the NTI. Whatever I have bought to date from the NTI is in good condition. With that trust I did not think twice before buying this solar light the minute I heard about it.

Institutional theory logic notes legitimacy is key to success of firm-customer interactions, as such interactions are embedded in marketplace with unique structures, norms and regulations. But in BOP markets there are no such formal institutional mechanisms to guide firms to establish legitimacy with LIC. However, NTIs have built trust and intimacy through their continued interactions with such consumers. This has developed social cohesion amongst NTI and LIC, wherein they collectively involve in many activities for general household well-being. This cohesion has facilitated breaking existing cognitive institutions prevalent with LICs, like habits, precedents, fear, risk, and culture norms. In this process, a mechanism of social learning is built over time that helps overcome LICs' anxiety, uncertainty, and association of complexity with purchase and usage of products. Consumer uncertainty and the associated risk that develops in adopting new products imposes legitimacy pressure, which directly affect firm's operational efficiency in LIC markets. Hence, an intervention from trusted sources like NTI becomes indispensable for firms to reach out to LICs.

Durable product firms recognize that they often lack legitimacy in the eyes of the LIC. To gain the LIC's trust, the firms resort to forming a partnership with the NTI. The Sales Director of a consumer durable company describes the role of the partnership as follows:

> When an employee of a partner organization goes and tells the customer about the product and explains the benefits, the customer easily understands, as she trusts the partner employee. She need not be concerned about the quality of the product and after sales service. It is also convenient to the customer. Thus, partnership helps to gain trust for the product.

Recognizing that the NTI is a trusted entity in the eyes of the LIC, the consumer durable firm partners with the NTI in order to gain legitimacy for its products and to increase sales. Thus:

P1a. *The greater the LIC's trust in the NTI, the greater is the LIC's propensity to purchase the firm's products through the NTI and the greater is the firm's sales.*

P1b. *The greater the LIC's trust in the NTI, the greater is the firm's propensity to partner with that NTI.*

LIC context: low education level. The LIC are less educated and thus have low literacy levels (Viswanathan, Sridharan, & Ritchie, 2010). While their more affluent and educated counterparts rely on information booklets, written reviews, and other written documentation to acquire information about products, the LIC rely on word of mouth to take decisions on product purchase (Viswanathan et al., 2007). This leads to a situation where the firm's usual marketing communication in the form of leaflets or other printed materials do not serve the purpose. The Senior Manager of a firm selling water purifiers points out to the lack of literacy and the inability to connect to the LIC at scale through non-print media such as videos.

> If the people living in the six hundred thousand villages (in India) were educated or if they were able to use smartphones, then it would have been a better situation.

The lower levels of education not only impact assimilation of product related information, but also awareness at the category level. A product category with a more complex value proposition, such as having lower environmental impact or saving money in the long run (i.e., lowers the total cost of ownership), may not be understood due to the lack of education. As the Director of a large NGO partnering with solar lantern firm pointed out in the context of use of solar lanterns instead of kerosene burning lamps:

> We must go and educate people. We need to educate people to use clean energy. The awareness about pollution among the people is very low.

The LIC's reliance on word of mouth for getting information has another consequence. Trust on the source providing the word of mouth or recommendation is important for the recommended to ultimately purchase the product. In the words of a senior manager who manages strategic partnerships in a leading consumer durables company,

> …the relative trust built up between the intermediary and the LIC is very high. So, when these products are being promoted by the intermediary, the LIC will think that these are really good and will not be concerned about the (unknown) firm.

The LIC are, to a large extent, uneducated and often illiterate. This not only limits the effectiveness of traditional marketing communication in print format, but the risk aversion that arises due to the LIC's self-awareness of their limited education also makes other media of communication, such as videos or television advertisements, ineffective (Cole, Sampson, & Zia, 2011). This inability of traditional marketing communication is overcome by the role of a trusted intermediary. The intermediary fills in the void through WOM and other non-print mechanism in spreading awareness and reaching to LICs. The trusted intermediary provides, both, better matching and social enrichment. The trusted intermediary knows both the firm's product offering and the LIC to whom they recommend the product. The intermediary knows their LIC neighbors in the community better than the firm's salespeople do, understand the firm's products and the value proposition better than the LIC customers do, allowing them to actively match the LIC customer with the appropriate product offering (Van Den Bulte, Bayer, Skiera, & Schmitt, 2018).

Extant literature suggests that social enrichment is particularly relevant for experience and credence goods, and more generally, for categories in which customers perceive ambiguity or high risk (DiMaggio & Louch, 1998; Kilian, Greuling, & Hennigs, 2013). In most instances, as the trusted intermediary is also a customer of the product, they are in a better position to convey the pros and cons as well as help with usage guidance to maximize the value derived from the acquired product. The trusted intermediary may also serve as an advocate of the LIC customer, enhancing their confidence that access to service or recompense in the case of product failure (Bursztyn et al., 2014; Reichheld, 2006). As education levels are lower in LICs, the information that intermediaries share is novel and valuable to these consumers thereby improving product adoption in these households (Cole et al., 2011). Further, the social bonding that the LIC enjoys with the trusted intermediary overcomes any reluctance to purchase the product.

Thus:

P2a. *The lower the education level of the LIC, the lower is their opportunity to assimilate information from traditional media and greater is their need for trusted sources of information.*

P2b. *The lower the education level of the LIC, the greater is the firm's need to partner with an intermediary.*

In LIC markets plural logics prevail. That is, coexistence of multiple logics and these logics could be complementing or conflicting in nature. In LIC markets welfare and value logics are jointly embedded in the consumers' purchase and consumption choices. Hence, offerings that meet the welfare needs within the economic and cultural context of LIC market tend to be successful. In organized markets like those seen in western countries, the classic institutional isomorphism argument is that one dominant institutional logic prevails, which dictates how firms behave to gain and sustain legitimacy. However, in emerging LIC markets, the business context is fragmented, replete with multiple belief systems, norms, cultures, informal rules spread across many stakeholders. Such circumstances are unfamiliar territory and extremely challenging situations for firms that usually compete through dominant institutional logics, either through institutional or competitive isomorphic actions. In this context, NTI emerge as institutional entrepreneurs with a novel mechanism to manage plural-logic based LIC market. NTI possess distinct cultural capital that resonates with the consumers and the society of LIC market and use legitimization strategies that integrates welfare and value to manage prevailing institutional complexity. NTIs operations tend to be normative in nature, setting informal rules and relational norms of interaction between the firm and LIC. Specifically, NTIs help firms to understand the dual importance of product being value for money and fostering larger household benefit and welfare. Therefore, NTIs do not merely play the intermediary role; they contribute in educating the firm to understand the LICs' unique institutional context and the way to manage those complexities.

Product fit with NTI's objectives: NTIs are organizations with social objectives such as providing education, health and other necessities to the community it serves (social ventures or not-for-profit organizations), access to credit (microfinance institutions), communication services (postal service), or access to cleaner fuels (firms distributing cooking gas that replace firewood stoves). The NTIs have a primary charter of catering to the general well-being and improvement of LIC households. Consequently, they are interested in products that improve the quality of life of the LIC and are willing to promote such products. The manager of a rural NGO, who we interviewed, states the organization's motivation for promoting solar lanterns.

> The reason we keep pushing for solar products is that we do not have electrification in rural villages. That is why I promote solar products and had decided to tie up with the firm.

The NTI's charter typically requires them to focus on the well-being of their customer. The NTIs see the provision of a platform for selling the product and providing access to product credit as a means to an end of improving the LIC's quality of life. Even for a microfinance institution the product loan is always about how best a small financial nudge can help and serve the LIC household at large. The Director of a microfinance company emphasizes this point.

> One way to look at it is that there should be some kind of understanding of what the LIC's real needs are and creating products that are suitable and acceptable. MFI is more of a need-based thing and we don't want to simply push people to take one more loan.

Successful consumer durable firms that are interested in serving these LIC markets appear to understand the need for products that address critical gaps in the LIC's life. They engineer and position products clearly in terms of the value they add to the LIC's life. The manager of a solar lantern firm discusses her product clearly in the value proposition terms.

> Our solar lamp helps children study at night, the bread winner continue to work in the farm outside later into the night safely, and allows women to cook and do other chores safely at night.

Consumer durable firms that have successfully developed partnerships understand that the importance given by the NTI and willingness of the NTI to not only carry the product but also promote it on its platform depends on the product's potential to have a positive impact LIC's life. The durable manufacturers appear to be fully cognizant of the NTIs' intervention in terms of spreading awareness as critical due the trust between the NTI and the consumer. Illustrative is the observation by a former executive of a consumer durable multinational.

> LIC has low awareness about water borne diseases and the need for water purifiers. Her typical response is that her grandparents drank water from the same well and lived to ripe old age. The NTI can perform the critical role of awareness creation. Since the product is about preventing (water borne) diseases, the NTI is willing to do so.

As the NTIs by charter are motivated to improve the quality of life of the LIC through different means, they are inclined to partner with firms that offer products that contribute to this goal. Thus,

> ***P3.*** *The greater the product's contribution to LIC household's quality of life (e.g., livelihood, health, education), the greater is the NTI's propensity to partner with consumer durable manufacturers' of such products.*

Product fit with the LIC's environment: The LIC live in conditions that have multiple constraints. One primary constraint is the size of homes, which are typically one or two rooms. Lack of space in homes means bulky items, items in large volumes, items that are to be stored and consumed later (for example, consumables allied to a consumer durable) are all less likely to be purchased by the LIC. In addition, the LIC's homes are often not well-constructed and lead to leaks and water damage during rains, flooding, and exposure to other environmental factors that can affect the use and efficacy of the product. Firms need to recognize these constraints in the designing of their product. The sales director of a solar lantern company pointed to their product design in the following manner:

> … these products are water resistant and unbreakable. We ensure they are durable in rural settings. This has led us to come up with a unique technology that best serves this market.

The manager of a water purifier company adds:

> The water purifier was designed keeping in mind the fact that most of the customers do not have access to running water or electricity. Our challenge was to create a product that could provide safe water without the requirement of a tap nor a plug point. Our R&D gave us this product, but it was initially bulky. Based on feedback from the customers in urban slums, we designed a product that was half the size but with the same efficacy for very small dwellings.

This not only increases the LIC's purchase intention, but also leads to the NTI's greater willingness to partner with the firm. The Head of a government women self-help group program, a large NTI, highlights the role of customizing the offering and the sales that ensues.

> The unique selling proposition (USP) of this project that we did in a LIC market in North India was the 4 to 5 months calibration stage where we localized the product. The products are then assembled, route plans made, and awareness camps conducted. Close to 40,000 solar lamps were sold by our women entrepreneurs.

Successful consumer durable firms appear to understand the need to customize the product in a manner that addresses the LIC's needs. Moreover, this helps the firm align better with the NTI by signaling its willingness to invest in the right product. Thus,

> ***P4.*** *The more contextualized/adapted the product is to suit the LIC's environment and living constraints, the greater is the NTI's trust on the product's benefit, and consequently, the greater is the NTI's willingness to partner with the firm.*

Firm's propensity to partner: NTI characteristics. Prior research has found that in partnerships between manufacturing firms and non-profit organizations, the firm needs to focus efforts on identifying the right partner (Hahn & Gold, 2014). Firms benefit from the right partner in multiple ways. The knowledge about the LIC needs and requirements that the NTI brings about is critical in designing the right product. The Director of an NGO in South India identifies the gap in knowledge about the LIC customers:

> It is not that the (consumer durable manufacturing) firms always produce a very good product. We use our discretion to select the product that caters to the needs of the LIC. We take customer feedback and understand his true requirements and share with the (consumer durable manufacturing) firm.

The NTIs have frequent interactions with LICs. These interactions often relate to topics that enhance opportunities and quality of life of LICs and go beyond mere product usage or transactions-oriented conversations. The Head of a Non-profit organization that we interviewed discussed the thought process regarding providing employment opportunities for the LIC:

> …we thought economic empowerment is the key… There were not too many opportunities, so we thought we can create entrepreneurship opportunities that impact the community.

Creating such opportunities increase engagement between NTI and LICs. The entrepreneurship opportunities can also take the shape of promoting and selling of the consumer durable firm’s product, by creating a cadre of village level entrepreneurs. Alternately, the NTI’s involvement in other livelihood activities, education, health related areas with the LIC creates a higher customer engagement, leading to better outcomes to partner with for the consumer durable firm with the NTI.

Consumer durable manufacturers also appear keenly interested in the geographic reach that the NTI has. The spread of LIC in the rural areas is large and reaching the last mile is often a challenge. The Head of Partnerships for an MNC discussed this issue in our interviews.

> Distribution and logistics is a deep challenge because reaching the last mile is always difficult. Managing logistics cost remains a perennial challenge. Other than MFI (i.e. a NTI), there is no channel that can provide us with this kind of reach.

The Chief Operating Officer of a smokeless cooking stove company echoed a similar point:

> The logistics part of the business is one of the more difficult challenges. Reaching the product to the rural is cumbersome. Using the MFI (i.e., NTI) branch offices for storing and selling the products made things easy. We tied up with (name of) MFI and we sold very large numbers very quickly. The cost of logistics comes down drastically.

The consumer durable firms consider the NTI's knowledge about the LIC, their involvement with the LIC, and their geographic reach as criteria in trying to identify the right partner. Thus,

> ***P5.*** *The greater the NTI's (a) knowledge of, (b) involvement with, and (c) reach in the LIC market, the greater is the firm's willingness to partner with that NTI.*

Intermediary's ability to bridge gap: VLE creation. As stated in proposition P5, the firm partners with the NTI aiming to gain from the NTI's knowledge of, involvement with, and reach in the LIC market. The direct manner in which the NTI's engagement with the LIC helps the firm is in the form of providing a platform for the firm to operate and providing legitimacy to the firm and its' products. The NTI also has the ability to create a cadre of VLEs, selected from the local population, who can promote and sell the firm's product. The NTI achieves a part of its own social objectives by creating livelihood opportunity for the LIC through the creation of the VLE. The firm gets a local person, who is influential and trusted by the LIC and who is a peer, to promote its products. The State Director of Common Services Centres, an e-governance initiative provides the characteristics of such VLE:

> Most of the VLEs have been *sarpanches* (village head), leaders, or are politically active. They are known to everyone, have been recognized as leaders, and already have the LIC's confidence.

The firm is also involved in the VLE selection process. This is important as the NTI may prioritize VLE selection based on current (low) income level, while the firm needs someone who is literate, fairly articulate, and is popular among the local LIC population. The final selection ends up as a mix of these criteria. The Manager of a solar lantern company summarizes the selection process as follows:

> We select people who move around in these villages and are popular among the people. They connect with the *kirana shops* (small mom and pop grocery stores) who stock our product and reach out to the LIC, helping in our sales.

In the context of microfinance institutions, the VLE takes the form of peers. Peers are selected from among the women who are part of the credit or self-help groups. In addition to their being belonging to the locality, they also share a common identity of belonging to the microfinance institution with the other LIC. They are treated as sisters by the other low income women who are also members of the microfinance institution. This cuts through the lack of trust that the LIC have on the firm and its product as well as addresses the difficulty of communicating the value proposition, as the peer is welcome at the LIC's home and can take the time and explain the value proposition in a language that they understand. A customer of a microfinance institution who had purchased a product through a peer talks about why she purchases from the peer.

> She (the peer) is my neighbor. If we want any information, we approach her. She is our agent and our leader. We buy what she recommends.

It is clear that even in a partnership that exists between the firm and the NTI, the firm's salesperson coming from outside the locality would not be as welcome as the peer. The ability of the NTI to identify, recruit and connect VLEs with firms is an important consideration for the firm in increasing its sales. Thus,

> ***P6.*** *The greater the NTI's ability to build entrepreneurial capacity amongst influential individuals & transform them as VLEs, the greater is the <firm's> product sales.*

Intermediary's ability to bridge gap: LIC's advocate. While we see the NTI bridging the gap to make the firm's job easier, for example in proposition P6, the NTI also takes the LIC's interest to help them come closer to the deal. One important manner in which the NTI does this is in addressing the LIC's concerns about product quality and after sales service. We mention in the introduction that the LIC have had numerous bad experiences with fly-by-night operators who have sold poor quality products and have disappeared. With high cost of failure, it is expected that the LIC would be reluctant to purchase durables from unknown and non-local firms. The NTI plays the role of acting as a guarantor, not legally, but in spirit. The NTI does this by voicing the concerns of the LIC regarding the after sales service and negotiating realistic service level agreements on the same with the firm. The State Director of the Common Services Centre, an NTI, emphasizes this requirement:

> That is absolutely necessary; without service we'll not book any order. Without service we will not even enter into an agreement with the firm!

The NTI clearly understands the need for addressing the after sales service. While the NTI does its due diligence about the company and the product, it is also keenly aware that a great quality product can also break down and if not serviced within a reasonable amount of time, can lead to dissatisfaction with the firm, and ultimately with the NTI itself. The Senior Project Manager of an NGO talks about the decision process in the following manner:

> Yes, first it should be good product; next the company should provide quality service. Product sale is not the only thing; service is also key.

The firm also recognizes that the aftersales service is an important concern for the LIC, and therefore for the NTI. The firm sees this as part of the NTI's good will and recognizes the NTI as an advocate and negotiator on behalf of the LIC. The Manager of a water purifier firm voices this:

> The partner organizations have goodwill with the consumer. They have long term relationship and they care about the products they promote to the consumer. They ensure good pricing and after sales service on behalf of the consumer.

The LIC has considerable concerns about aftersales service based on prior experiences. The NTI, when considering the partnership with a firm, is aware of these concerns and also understands that any default in the aftersales service will also affect its own reputation. The NTI, then, acts as an advocate for the LIC in ensuring mechanisms for aftersales service. Thus,

> ***P7.*** *Greater the willingness of the firm to accommodate the NTI as LIC's advocate for after sales-services, the greater is the propensity of the NTI to partner with that firm.*

Need for Credit. A critical constraint under which LIC operate is low income levels and unpredictable earning cycle. This often results in a situation where these consumers do not have sufficient cash when they need the product. Having spread awareness and built demand for those products, this is a setback for firms and their marketing managers. While very few retailers are willing to sell their products on credit, LICs often require small financing support to facilitate their purchases. As the CEO of a solar lantern company noted:

> The reason why the (traditional) retail channel does not work (in this context) is because the retailer does not offer any kind of financing option.

Similarly, a Director of an MNC pointed out:

> The bulk of these people (LIC) are not able to afford a cash purchase but they are able to pay installments.

As one low income consumer echoes

> We are not able to make onetime payment to the company, but through the MFI (micro financing institution) we can pay in easy installments.

While managers sense the need to extend financing support to LIC, for most firms extending product financing is not part of their capabilities. Therefore, firms attempt to identify and partner with local organization that can extend credit. As one Director of an MNC pointed out:

> We are looking for organizations that can provide financing. As a manufacturer, financing is not our core strength.

Furthermore, the low income consumers present a unique challenge. These consumers are unfamiliar with banking and don't possess bank accounts and rarely possess basic documents like identity cards, license etc. Hence, they reach out to informal money lenders for their credit needs. This results in a situation where there is limited or no systematic information available about their credit-worthiness. Another challenge managers face is related to their unfamiliarity of the LIC markets, which are diverse, and geographically dispersed with unique regional characteristics. Therefore, even if a firm offers credit, managers point out that they have limited local presence to collect the installments or trace the customer subsequently. A manager of an MNC echoed this saying:

> We, as outsiders, do not know the customers. Even if we had the working capital to give consumer credit, we would not be able to identify whom to give credit to. Again, with little local presence, collecting the loan becomes costly and many loans will fail.

The intermediary that provides credit to LIC as part of its business bridges the credit gap. Being part of the local landscape and having extended credit to the LIC in the past, the intermediary, such as an MFI, has knowledge on whom to extend credit to and the ability to recover the loan in installments. As the CEO of a reseller firm puts it:

> We have a relationship with the micro-finance organization whereby they will be providing a loan. This helps the client to take a quick decision on the purchase.

In sum, the LIC has financial constraints that rule out a cash and carry purchase for the most part. The firms have limited capacity and knowledge to provide consumer credit. Moreover, managers have poor understanding of LIC' credit worthiness and have limited local presence for credit recovery. A non-traditional intermediary who provides credit as part of its core business can bridge this gap. Thus:

> **P8.** The lower the ability of the firm to (a) assess LIC's creditworthiness and (b) provide loans, and (c) recover loans, the greater is the firm's propensity to partner with the intermediary.

Alignment of objectives: The NTI and the firm generally have different focus; the NTI has public-service orientation, while the firm has commercial/profit orientation. As such, the two actors' differing objectives may result in lowered interests in partnering. One actor sees the other as having a motive that is not compatible with its own objectives. However, if there is an overlap in a subset of these objectives, there is an increased interest and willingness to work together. As described by the Director of an NGO.

> It was a coordinated relationship; they (firm) have some objectives (on water borne diseases) and we have some mission (on community welfare) and both came true. We were working together and there was good result. We look forward to continuing this mutually beneficial partnership.

With regard to micro financing companies that act as NTI, firms consider them a natural fit as they are familiar with financial management, credit recovery and commercial benefits of loans. As the Director of partnerships for an MNC puts it,

> Between the MFI and the customer, the trust was already developed because they were already giving them finance. So, we found micro-finance institutions are the right partners, and since then lot of our work not only in India but (also) globally focused on working with micro-finance organization.

Managers tend to focus on consumer benefits of product usage beyond just the commercial aspects. This draws NTI's attention as it relates directly to their core activity of LIC wellbeing. As described by the Head of partnership sales for a large MNC, it is an alternate way of alignment of objectives.

> The founder of (that intermediary) should be interested in selling (our product). So long as we converge on a common point it is good. Somebody can look at (our product) as a means of providing safe drinking water to prevent diseases.

Hence, alignment of objectives, whether social or commercial, is important for the partners coming together and staying together. Thus,

> ***P9a.*** *The greater the alignment between NTI's and firm's social objectives, the greater the NTI's propensity to partner with the firm.*
>
> ***P9b****. The greater the alignment between NTI's and firm's commercial objective, the greater is the firms' propensity to partner with the NTI.*
>
> ***P9c****. The greater the alignment between the firm & the intermediary on commercial & social objectives, the greater is the long-term sustainability of the partnership.*

Demonstration and awareness building: As discussed in P1, LIC have limited exposure and low or no education. This results in a situation where the need for concept selling becomes paramount. Even before a firm can promote its brand, there is a need to establish what the category is and the need for the generic product. The firm, with its typical sales person, is not orientated towards concept selling. This is usually done through push in the media and the sales persons typically address the selling and stocking at the distributor and retailer level in order to cater to the pull that gets created.

The NTIs, on the other hand, are used to concept selling for their own products or offerings. They also clearly understand the need for concept selling, awareness building and the usefulness of demonstrations in these efforts. Research has shown that demonstrations increase production adoption as it improves consumers' familiarity with the product and enable them to learn about products' usage and benefits (Heiman et al., 2001). As the CEO of a VLE organization puts it,

> You want somebody to go to the well and draw water and pour it in a particular water purification device. Then he or she should drink the purified water. Creating awareness among people is the biggest differentiator for sale.

The firms also understand the need for demonstration. Among the uneducated LIC, seeing certainly is believing. Importantly, in emerging market context demonstration reduces consumers' uncertainty about the products' benefits (Sarthak et al., 2011). The Sales Director of an MNC explains the critical role that the NTI can play in the demonstration process.

> These outreach organizations like (NTI bane) are very important in India and useful because they take care of a very important part, which is demonstration. They also handle delivery and installation and after sales service.

The role of awareness building and demonstration has been internalized by firms. However, they also understand their own limitations with regard to building awareness and conducting demonstration, both in terms of the manpower requirement, as well as in their capabilities. They find the NTI to be an ideal partner in taking care of these requirements. Thus,

P10. *The greater the willingness of the NTI to demonstrate and spread awareness about firm's product, the greater is the firm's sales.*

A summary of the various relationships covered by the propositions is provided in Figure 6.

[Insert Figure 6 here]

3.6. Discussion

Our research looks at the phenomenon of NTIs bridging the institutional voids in emerging markets to cater to the needs of firms producing consumer durables and its potential customers. We set out to understand the circumstances in the LIC market that necessitates the emergence of such NTI using grounded theory approach.

Our research reveals the difficulties faced by the LIC due to their circumstances, including illiteracy, lack of access to recourse in case of problems, risk aversion, and limited, uncertain and infrequent incomes. Our research also reveals the challenges faced by firms designed to cater to the urban markets: lack of understanding of the LIC and her environment, non-viability of extending reach to fragmented LIC markets, not having the experience and capabilities within the system to cater to the rural customer, and inability to provide product credit.

This gives rise to the need for an institution that has the capabilities to address the challenges of both, the LIC and the firm, simultaneously. The NTI is such an intermediary possessing the experience and capabilities to cater to the firms and LIC. Given its local presence, trust, and engagement with the customer, the NTI is in a position to provide a local platform to promote the firm's product in a credible and trust-worthy manner, overcoming the issues of reach and risk aversion. In addition, it also acts as a normative institution to address the customers need for recourse against the firm in case of any product related issues. In addition, the NTI possesses deep understanding of the LIC, which the firm can tap into for localizing the product. The NTI typically is already involved in awareness campaigns about health, education and other issues relevant to the LIC and the firms can use the NTI to conduct generic promotion of the category while the firm itself can stick to its strengths in promoting its brand. Finally, the NTI itself or through a partner organization solves the critical issue of product financing, a challenge for both the firm and the customer.

Our research identifies the mechanisms that enable the NTI to operate as a bridging institution. The NTI relies on the trust and ties with the customer as well as between the customers to create social capital. This social capital is enhanced using additional mechanisms such as providing for the employment and welfare of the customers. The NTI also has distribution capital due to its local presence and its ability to create peer or village level entrepreneur networks that can channel information and products. Finally, the NTI also has financial capital or can create access to financial capital that helps bridge the credit gap.

Theoretical implications

The mechanisms that we unearth for the emergence of the NTI, its ability to bridge the institutional distance, the factors leading to the formation and sustenance of the partnership add to the literature on channel partners and distribution from the B2B perspective. Our research also adds a new area of exploration on customer engagement in the form of the firm leveraging the customer engagement of the NTI with the customer.

Managerial implications

Our research helps identify channel strategies for firms to target low-income and bottom of the pyramid customers. We also identify the moderating factors that determine channel choices for effectiveness and firm performance.

Limitations

While there is evidence to suggest that India can be considered as a microcosm representing the emerging markets as we have discussed in the methods section, there would be specific insights that are context and culture dependent that can emerge from extending the research to other emerging markets.

Given the scale of the work, we have restricted out investigation to understanding and codifying the mechanisms in the LIC markets that leads to the emergence of the NTI. We state these relationships in our propositions. However, we do not empirically validate these propositions through surveys or other methods. This is primarily due to the scale of the current study that already covers over 240 in-depth interviews.

Future research directions

Distribution channels and channel partners are critical elements of B2B marketing. Given the shift in focus towards emerging markets and the LIC, especially BOP, there is a greater need to understand how these channel relationships in these markets operate. Future researchers can consider research that provides nuanced understanding of the channel partnerships in other emerging markets. They can also empirically validate one or more of the propositions that we put forward.

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Figure 1: LIC' Challenges

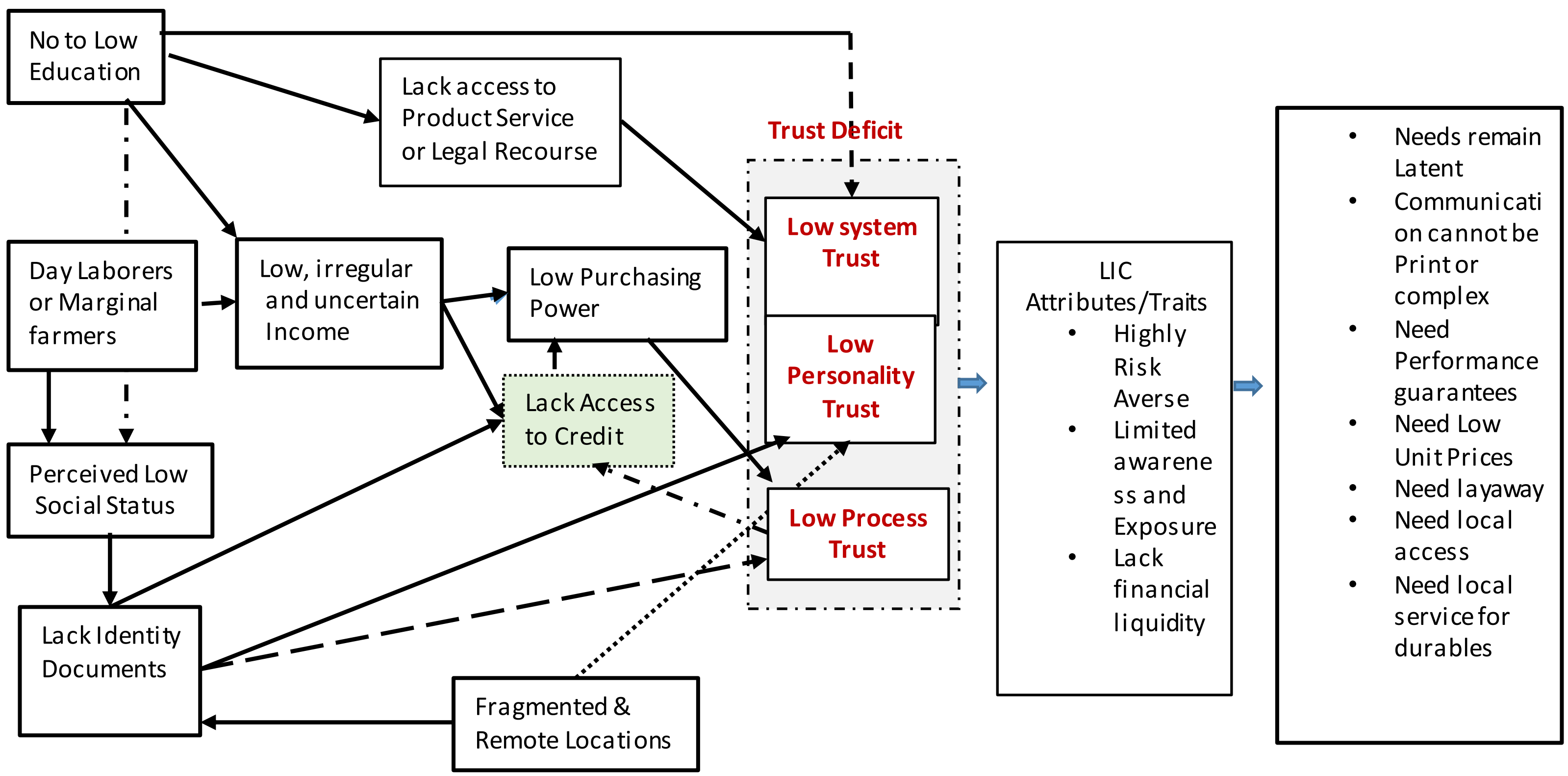

Figure 2: Firm's Challenges

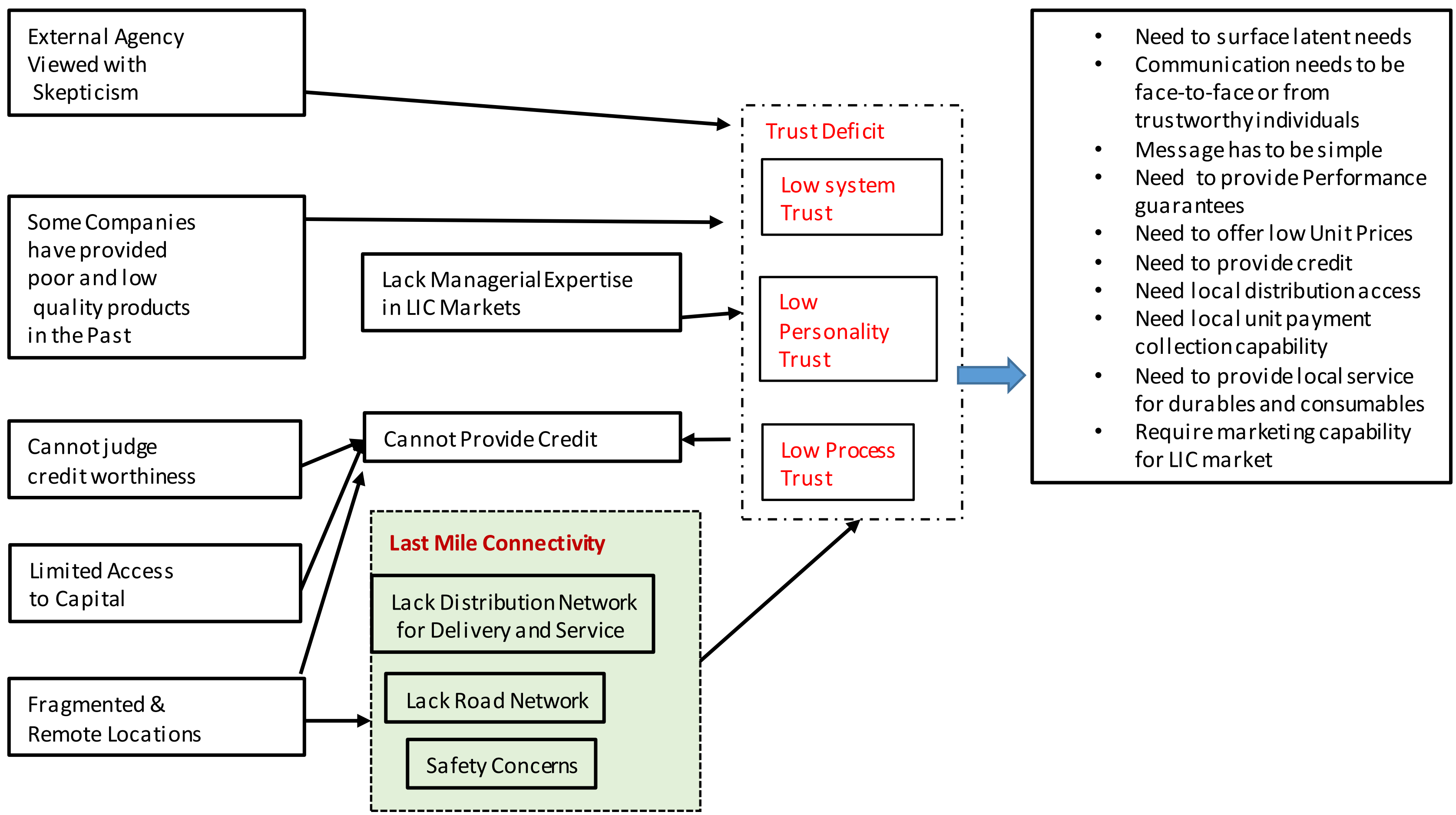

Figure 3: NTI Bridging Mechanism

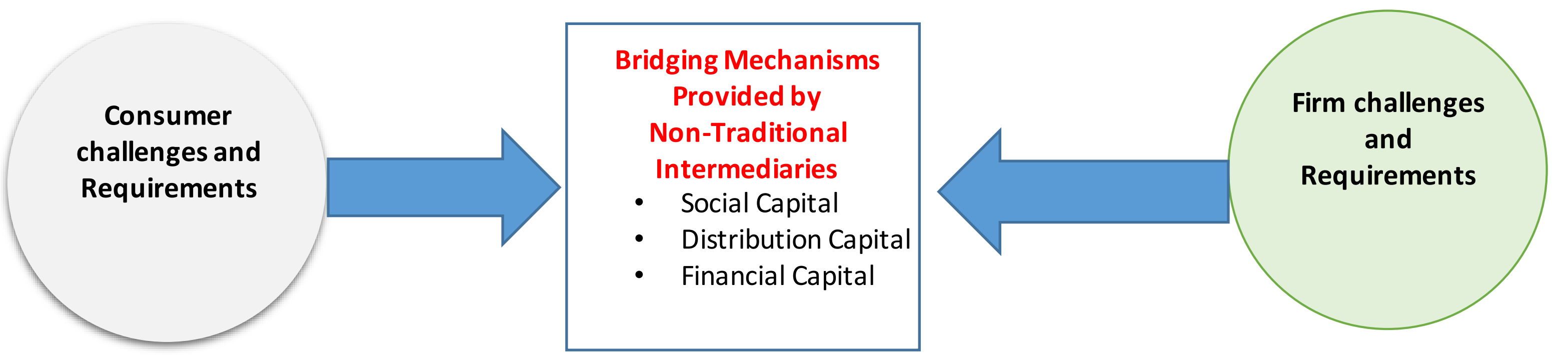

Figure 4– Trust-ties Framework

	TIES									
	Strong Ties				Weak Ties					
	Simplex Ties		Multiplex Ties		Simplex Ties		Multiplex Ties			
RELATIONSHIP	Business	Social	Business	Social	Business	Social	Business	Social		TRUST
Firm - Intermediary							Contract based			System
							Interactions based		A	Process
							NA			Personality
Firm - Peer					Contract based					System
					Interactions based				B	Process
					NA					Personality
Firm - Customers							Trust that intermediary would support customers			System
							NA		C	Process
							NA			Personality
Intermediary - Customers (NGO)			NA							System
			Repeat loans - builds confidence						D	Process
			NA							Personality
Intermediary - Customers (PPP)						NA				System
						Repeat transactions builds trust			E	Process
						NA				Personality
Intermediary - Peer	NA									System
	Repeat interactions programs & loans								F	Process
	NA									Personality
Peer - Customers				NA				NA		System
				Frequent interactions with some customers				Infrequent interactions with most customers	G, G	Process
				Actor Personality				Actor Personality		Personality

Figure 5 – Summary of Findings

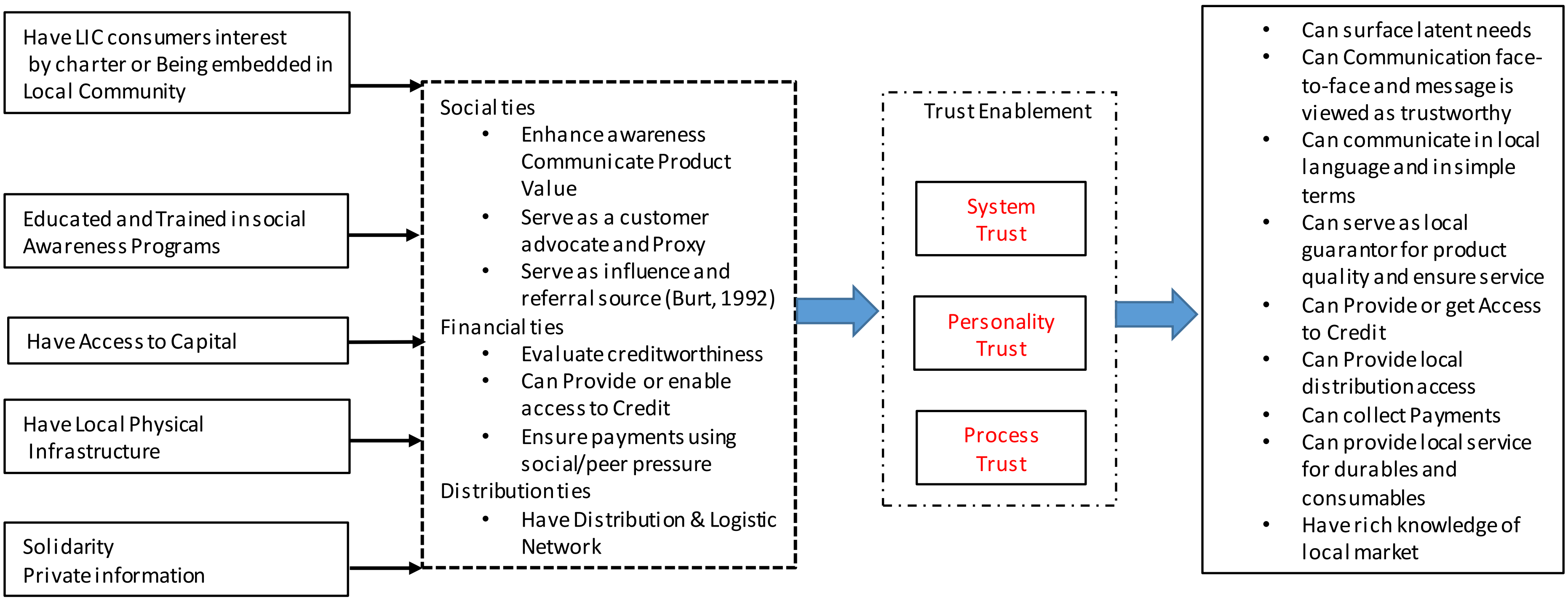

Figure 6: Inter-relationship between Propositions

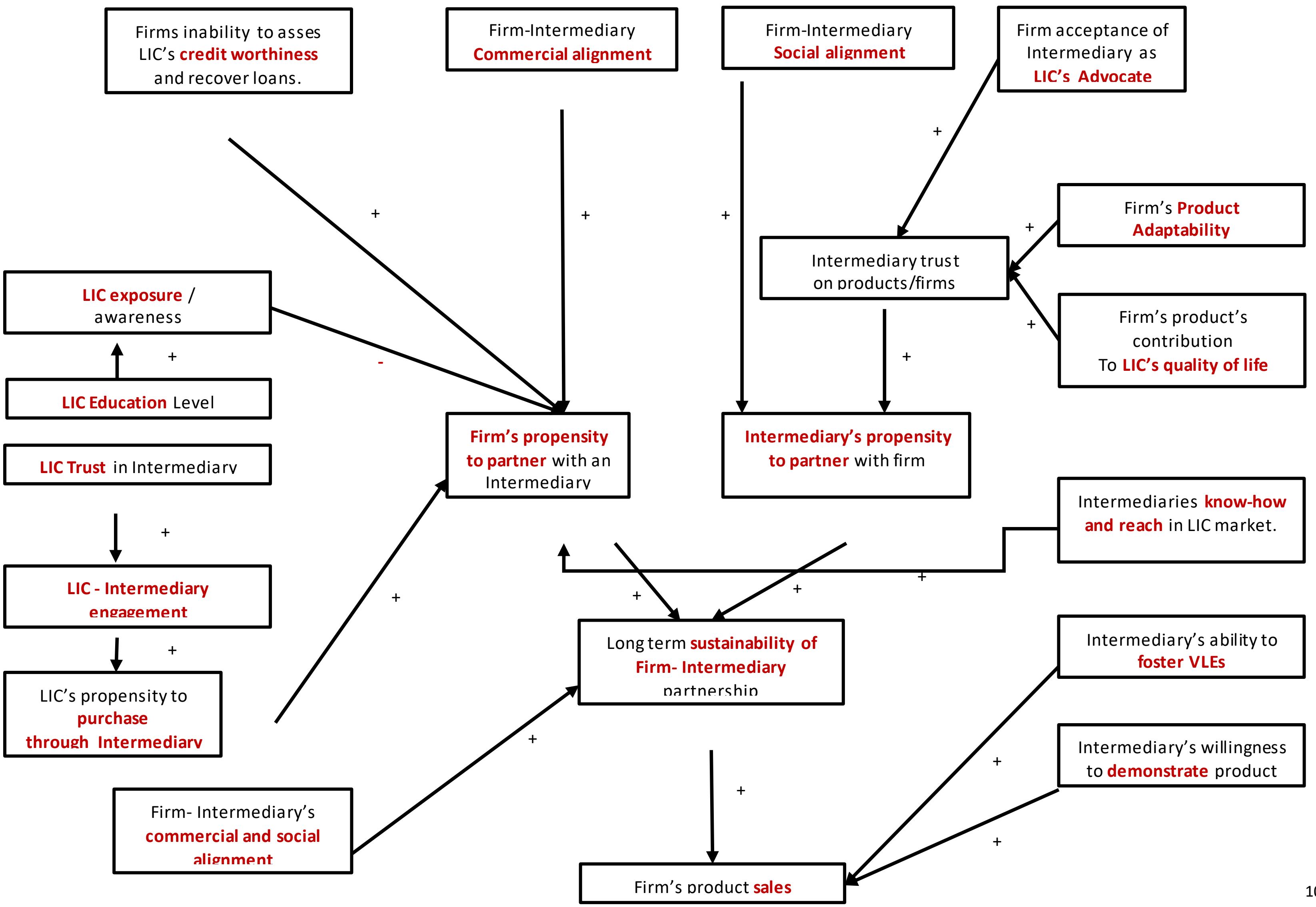

Table 1– Interviews Summary

Particulars	**Interview Hours**	**Frequency**
Firm Managers	12 hours and 35 minutes	41
Intermediary Managers	13 hours and 28 minutes	29
Consumers	27 hours and 30 minutes	121
Non-Consumers	7 hours and 25 minutes	38
Peers	3 hours and 5 minutes	13
Total	64 hours and 3 minutes	242
	Other Details	
Interview Transcripts	1015 Pages	
Coding	Coding was done independently by the authors and one master's level RA	

Table 2– Sample Characteristics of Respondents

Characteristics	Details
Consumer-Gender	Male -34 Female -87
Consumer of product categories	Cook Stoves – 8 Solar Lantern – 85 Water Purifier – 9 Mobile Phone – 1 Multiple Products -19
Consumer-Education	High School or above – 29 Schooling up to high school – 26 Uneducated -13 Not Reported -53
Firm Managers-Position	Senior Management -26 Operational Level -15
Intermediary Managers	Senior Management – 16 Operations Level -13

Appendix A – Working definitions of types of non-traditional intermediaries

A.1. Microfinance Institution/ Micro-credit Institution – This is an entity that provides small loans to groups of women, who then use it for productive purpose and repay the loans in weekly, bi-weekly or monthly installments. Each woman in the group stands as guarantor for all the other women in the group. In case of non-payment of an installment by any woman in the group, the remaining group members pool in money and make up the installment. Technically, Microfinance Institutions provide both credit and savings products whereas Micro-credit institutions only provide loans. However, in the emerging market context in which we are conducting the study, all institutions provide only micro loans and do not offer savings product, whether they call themselves microfinance institutions or micro-credit institutions.

A.2. Self-help groups and their federations – Self-help groups are nurtured by NGOs by bringing together groups of 10 – 20 women in a locality and helping them start with small, but regular, savings. Once they get into the habit of savings, the group is connected to the nearest bank which then provides the group with loans for productive purposes. The savings done by the group is also deposited with the bank. Several such SHG groups come together and form a cluster which then supports all members for loans and for other social issues. Continuing the federal system, several clusters come together to form a federation, which has objectives beyond financial upliftment and works as liaison with local government for health, education, etc.

A.3. Non-governmental/ non-profit organizations – These are entities with social objectives registered as trusts or societies with clear non-profit mandate. These institutions usually work at the grass-roots level supporting the community in areas such as education, health, poverty alleviation, etc. While a part of their activity may involve products or services, these are generally delivered free of cost to the beneficiary. While such organizations depend primarily on donations and/ or grants, they also nurture aspirations of becoming self-sustainable in some manner.

A.4. Cooperatives – These are community based and led entities that are registered as societies and follow the principles of cooperative movement. This includes one member – one vote, distribution of surplus among members, democratic approach, etc.

Appendix B – Questionnaires

B.1. Questions for managers of firms

We asked each interviewee a set of five questions along the following lines:

1. Could you talk to us about the firm's motivation and activities (for product) with respect to these consumers?
   - How does your firm define or think of Bottom of the Pyramid (BoP) customers?
   - Could you talk to us about the firm's activities with respect to these consumers?
   - Why did you decide to sell products to the BoP customers?
2. What are the aspects that are different about BoP consumers and selling to them?
   - What did you think would be different about selling to BoP customers?
   - When you were starting the process of selling to BoP customers, did you change any aspects of the product or consider changing anything?
   - Any thoughts on how selling to BoP customers undergone any change since the start of the partnership?
   - What did you think would be different about the BoP customers themselves when you started the operations?
   - How has your perception of the BoP customers changed with your experience?
3. Which intermediaries (channel partners) did you choose for this segment and why?
   - What channel partners do you use to reach the end consumer?
   - What was your selection criteria for choosing channel partners?
   - Who are the different actors in each of your channels (including people in your own firm)?

- Please describe the role, responsibilities and incentives for each of the actors
- What are the pros & cons of each of these channels?

4. How do you and your channel partner engage the customer and how does that alleviate their concerns?
   - How does your channel partner connect or engage with the customer for their business?
   - How do you connect or engage with the customer for your business?
   - In your opinion, what would be concerns for the end customer when considering your product?
   - How does your relationship with channel partner help in addressing any of the customer concerns?
5. Based on past experiences, how would you structure the next channel partner arrangement to make it ideal?
   - What would be your 'ideal' channel arrangement? Who would be actors and what would be their roles, responsibilities and incentives?

B.2. Questions for managers of intermediaries

We asked each interviewee a set of five questions along the following lines:

1. Could you talk to us about your organization's motivation and activities (for product) with respect to these consumers?
   - How does your firm define or think of Bottom of the Pyramid (BoP) customers?

- Could you talk to us about the organization's activities with respect to these consumers?
- Why did you decide to partner with firms to promote products to the BoP customers?

2. What are the aspects that are different about BoP consumers and selling to them?
    - What did you think would be different about selling to BoP customers?
    - When you were starting the partnership, did you ask the firm to change any aspects of the product or to consider changing anything?
    - Any thoughts on how selling to BoP customers undergone any change since start of partnership?
3. Which firms did you choose to partner with and why?
    - What was your selection criteria for choosing partner firms?
    - Who are the different actors in each of your partnerships (including people in your own organization)?
    - Please describe the role, responsibilities and incentives for each of the actors
    - What are the pros & cons of each of these partnerships?
4. How do you and your partner firm engage the customer and how does that alleviate their concerns?
    - How do you engage with the customer in your normal course of business?
    - How does the partner firm engage with your customer for their business?
    - In your opinion, what would be concerns for the end customer when considering the firm's product?

- How does your relationship with channel partner help in addressing any of the customer concerns?

5. Based on past experiences, how would you structure the next channel partner arrangement to make it ideal?
   - What would be your 'ideal' channel arrangement? Who would be actors and what would be their roles, responsibilities and incentives?

<u>B.3. Questions for customers</u>

We asked each interviewee a set of seven questions along the following lines:

1. Please tell me about you and your family.
   - What is your occupation? Any other work you undertake in your free time? Supplementary income? What is your total household income?
   - How long have you been farming / working? Does anyone else in your house help you?
   - Are you a member of any SHG/ Microfinance? If yes, Name of SHGs. Number of members.
2. How did you know _______? (Intermediary)
   - How did you come to know of ____________ (Intermediary)? PROBE IN FULL. Where? When? Related? Same village? Same SHG? (Please ask the same question for each intermediary that the customer is a member of)
   - What have been your activities with the intermediaries? (please ask for each intermediary separately)
   - Have you taken any loans? Currently how much loan have you taken from each intermediary and how much installment do you pay each week/ month? (Please

ask for each intermediary. Please note down the amount of loan, the amount of installment, and the frequency - weekly or monthly)

- What are the purposes for which you have taken loans from the intermediaries? How have you used these loans? What is the interest rate on the different loans? (Please probe till they voluntarily come out with product loan)

3. Could you talk to us about your experience with the firm's product?
   - How has the product made a difference in your life?
   - When did you purchase the product? (year) What was the cost of the product? What amount did you pay as installment and for how many periods? (for eg: Rs.50 X 30 weeks)
   - When did you feel the need for such a product? Where had you seen or heard about the product before?
   - Did other members in your sangha encourage or discourage you about purchasing the product?
   - What have you talked to your family and friends about the product?
   - Are there any other products or services you have purchased from any intermediary? (If yes, probe for that product with first three questions)
4. What role does the intermediary play in your life?
   - How did you start your association with the intermediary?
   - What other roles/ support does the intermediary play in your life?
   - How emotionally connected do you feel with the intermediary?
5. How did intermediary help you decide to buy the product?
   - How did the intermediary help you understand the product?

- If the firm had directly approached you with the product, how would you have reacted and why?
- What concerns did you have about the product?
- How did the presence of the intermediary help reduce the concerns?
- After the purchase of the product, how has the intermediary helped you with respect to the product?

6. How do you feel about the firm which makes the product?
   - How well did you know the firm and the product before the intermediary introduced them?
   - What interactions have you had with the firm or its staff till date?
   - How emotionally connected do you feel with the firm?
   - Why do you think some of the other customers of the intermediary have not purchased the product?
7. What other products would you want the intermediary to bring through similar partnerships?
   - What other products would you want the intermediary to bring through similar partnerships?
   - What changes would you want in the terms, conditions of process through which the new products are introduced?

<u>B.4. Questions for non-customers</u>

We asked each interviewee a set of four questions along the following lines:

1. What role does the intermediary play in your life?
   - How did you start your association with the intermediary?

- What other roles/ support does the intermediary play in your life?
- How emotionally connected do you feel with the intermediary?

2. How did intermediary promote the product?
    - How did the intermediary help you understand the product?
    - If the firm had directly approached you with the product, how would you have reacted and why?
    - What concerns did you have about the product?
    - How did the presence of the intermediary help reduce the concerns?
    - Why did you decide not to buy the product?
    - What should the firm or intermediary change in order for you to buy the product?
3. How do you feel about the firm which makes the product?
    - How well did you know the firm and the product before the intermediary introduced them?
    - What interactions have you had with the firm or its staff till date?
    - How emotionally connected do you feel with the firm?
    - Why do you think some of the other customers of the intermediary have purchased the product?
4. What other products would you want the intermediary to bring through similar partnerships?
    - What other products would you want the intermediary to bring through similar partnerships?
    - What changes would you want in the terms, conditions of process through which the new products are introduced?

B.5. Questions for the peer

We asked each interviewee a set of seven questions along the following lines:

1. Could you talk to us about your experience with the firm's product? Probe: How do you feel about the firm which makes the product?
2. What role does the intermediary/ firm play in your life?
3. How did the intermediary/ firm help you to promote the product? Probe: What type of training and other interactions you have with the company/ intermediary?
4. What other products would you want the firm or the intermediary to bring through similar partnerships?
5. How did you get in touch with the intermediary (e.g., NGO, MFI) or firm to sell those products?
6. What is your motivation to sell these products? Probe: monetary incentive? Beyond that any reasons?
7. Comment and contrast your relationship with a.) End consumer and b.) NGO? How do you benefit through these relationships?