

RESEARCH ARTICLE

Addressing difficulties with abstract thinking for low-literate, low-income consumers through marketplace literacy: A bottom-up approach to consumer and marketing education

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Abstract

We examine a bottom-up approach to consumer and marketing education for subsistence consumers, that is, those with low income and relatively lower literacy levels. They face a variety of cognitive and other constraints, with difficulty in abstract thinking being a central issue that is critical for effective decision-making. We study the impact of marketplace literacy education, with its unique bottom-up approach, on abstract thinking in the consumer domain. We test the effectiveness of a bottom-up educational approach, which covers concrete examples before abstract concepts, compared to the reverse sequence of a top-down approach. We find that the bottom-up approach in marketplace literacy education leads to more abstract thinking in the consumer domain compared to a top-down approach. We discuss the implications of this research for consumer affairs.

KEYWORDS

abstract thinking, bottom-up approach, consumer education, low-literate consumers, marketplace literacy, subsistence marketplaces

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1 | INTRODUCTION

Making effective decisions in the marketplace is fundamental for survival, health and consumer well-being. Consumer and marketing educational programs enable consumers to make more informed decisions in the marketplace. Among the most vulnerable are subsistence consumers, that is, those living in the broad range of low income and therefore barely making ends meet (Viswanathan & Rosa, 2007). Such consumers live in economies ranging from the least developed to most advanced. Highly associated with low income is relatively low literacy and related cognitive and other constraints that subsistence consumers have to overcome. Central to cognitive constraints are difficulties with abstract thinking (Viswanathan et al., 2005). Such thinking is critically important for effective consumer decision-making (Fujita & Carnevale, 2012). For instance, this type of thinking is essential for assessing the value in an exchange by abstracting from specific, concrete pieces of information, and for fully understanding complex notions such as health and nutrition. This research addresses the question of how best to design and deliver consumer and marketing education to subsistence consumers to enable abstract thinking, henceforth referred to as (relatively) low-literate, low-income consumers.

In this regard, articles in the last two decades related to consumer education in the *Journal of Consumer Affairs* cover a variety of topics. A number of papers focus on financial education and capability; knowledge gains for children (Batty et al., 2015), empowerment of youth (Luukkanen & Uusitalo, 2019), coaching for youth (Modestino et al., 2019) vulnerable consumers (Xiao & Porto, 2022), long and short-term behaviors (Wagner & Walstad, 2019). Estrada-Mejia et al. (2020) show that education level (years of schooling) is related to numeracy as well as non-numeric intelligence (non-numeric crystallized intelligence and fluid intelligence), and only numeracy is positively related to wealth accumulation in agrarian settings. Thus, education is positively related to financial outcomes. Viswanathan et al. (2021) focused on marketplace literacy in subsistence marketplaces. Research in the *Journal of Consumer Affairs* has also covered top-down versus bottom-up efforts toward sustainable consumption (Teufer and Grabner-Kruater, 2023), mindful consumption (Parvatiyar & Sheth, 2023); and empowerment through financial education (Luukkanen & Uusitalo, 2019). Rather than being at the granular level of educational content and delivery, these contrasting approaches relate to institutional and other means to achieve desirable outcomes. For instance, Teufer and Grabner-Kruater (2023) examine consumer networks and consumer-producer collaborations in enabling sustainable consumption. Luukkanen and Uusitalo (2019) frame top-down versus bottom-up approaches to financial capability, with the latter encompassing different dimensions of financial empowerment, such as presence of financial choices, ability to participate in financial matters, etc.

A comprehensive review of consumer empowerment (Suk et al., 2023) identifies two main areas of finance and education. Specific topics identified are financial literacy and education, dietary/nutrition, financial management, school education, information related ability, and empowerment in markets, with the first two topics being “hot” or having a relatively high proportion of research. Addressing a surprising less-researched topic in recent times in consumer affairs, we focus on consumer and marketing education. Moreover, distinct from past research, we focus on the design and delivery of consumer and marketing education.

Consider two different approaches to being educated as a consumer. One begins with demonstrating concrete examples of product purchase through a shopping exercise, followed by a coverage of important topics related to making effective decisions as a consumer, and ending with introducing the abstract notions of product value and market exchange. Next consider an

approach with the opposite sequence of beginning with the abstract concept of value in an exchange, followed by specific topics on consumer decision-making, and then completing a shopping exercise as a concrete example of product purchase. The first approach follows the sequence of demonstrating concrete examples followed by introducing abstract concepts, adopting a bottom-up approach to consumer and marketing education. This approach is central to marketplace literacy education, designed on the basis of research on subsistence marketplaces. The second approach reverses this sequence and reflects a top-down approach to consumer and marketing education. We assess the notion that the bottom-up approach to consumer (and marketing) education, that is, marketplace literacy, leads to more abstract thinking. The emphasis on the outcome variable, abstract thinking, reflects the central difficulties that low-literate, low-income consumers face (Viswanathan et al., 2005). Noteworthy here is how we study top-down versus bottom-up approaches at the granular level of educational content and delivery, in contrast, say, to the study mentioned above on empowerment broadly construed as a bottom-up approach to financial capability (Luukkanen & Uusitalo, 2019).

Lack of ability to successfully make purchase decisions and make ends meet is an acute problem for low-literate, low-income consumers.¹ Prior research has shown that low-literate, low-income consumers are often unaware of their rights, often lack the confidence to be effective shoppers, frequently fail to plan their purchases, and have difficulty in understanding product and price-related information (Adkins & Ozanne, 2005a; Viswanathan et al., 2005). Many of these shortcomings arise from cognitive constraints, primarily difficulties in abstract thinking, and can have negative consequences on the well-being of such consumers. These consumers require a unique set of skills to successfully navigate the marketplace. Consumer and marketing education incorporating marketing concepts, such as marketplace literacy education, offer a means to help low-literate individuals overcome these challenges. They do so by facilitating the development of conceptual knowledge and skills required to function as effective consumers (Viswanathan et al., 2009a, 2021). This program developed on the basis of research on low-literate, low-income consumers in subsistence marketplaces has been argued to be effective due to its bottom-up approach. The program has been shown to have a positive impact on personal well-being, consumer confidence and decision-making, and entrepreneurial intentions and startups (Viswanathan et al., 2021). However, the bottom-up (versus top-down) educational approach has not been directly compared, as is done in the current research.

From a more general educational perspective, research on the design of educational programs suggests that both bottom-up and top-down approaches have merits. For instance, Kolb's experiential theory of learning (Kolb & Kolb, 2005) suggests that introducing abstract concepts first results in learners creating a mental model of reality that is used to make predictions about behavioral outcomes. On the other hand, introducing concrete concepts first helps learners reflect on their own experiences, and use these experiences to develop an understanding of abstract concepts. However, these two approaches have not been compared in the domain of consumer and marketing education, nor have they been linked to consumer decision-making. Consumer education programs typically target vulnerable consumers with cognitive limitations, such as low-literate consumers (Adkins & Ozanne, 2005b; McGregor, 2005; Oumlil & Williams, 2000; Viswanathan et al., 2009a). Here, the efficacy of bottom-up versus top-down approaches will be influenced by how such consumers process information. Additionally, low-literate, low-income consumers also must overcome cognitive constraints due to poverty and chronic scarcity (Soman & Cheema, 2011). We draw from prior research on low-literate, low-income consumers and from construal level theory to study the bottom-up approach compared to the top-down approach to consumer and marketing education. We

develop conceptual arguments about the educational efficacy of the bottom-up approach stimulated by insights about low-literate, low-income consumers.

We conducted a field experiment among subsistence consumers in India to test the notion that marketplace literacy education with emphasis on a bottom-up approach, will lead to enhanced abstract thinking in the consumer domain. We capture abstract thinking in the consumer domain using a new, consumer-specific measure of abstract thinking, designed with a similar approach to a widely used measure of generic abstract thinking (Vallacher & Wegner, 1987), providing psychometric support for it. We conducted a second field experiment isolating a consumer literacy module from the broader marketplace literacy curriculum and directly comparing bottom-up with top-down educational approaches.

This research contributes to our understanding of consumer and marketing education in a number of ways. These findings show that the bottom-up educational approach is more effective than other approaches for engendering abstract thinking in the consumer domain. Indeed, difficulty with abstract thinking is a fundamental constraint that low-literate, low-income consumers face. Counter to psychological research wherein most matching effects find that low level construal matches lead to concrete thinking, we show that a bottom-up approach facilitates abstract thinking. We also validate a consumer-specific measure for assessing abstract thinking by adapting a widely used general behavioral measure from social psychology. Thus, we contribute to the intersection of marketing and education by examining how education about marketing should be designed and delivered effectively for consumers with lower levels of literacy and income.

2 | LITERATURE REVIEW

In this section, we first present the insights about cognitive constraints based on research on low-literate, low-income consumers in subsistence marketplaces. We then discuss the marketing literacy education designed with a bottom-up approach to overcome the constraints uncovered in the research. We then review the broader relevant literature in education on bottom-up versus top-down approaches, as well as literature closer to the consumer domain on construal level theory, on abstract versus concrete thinking.

2.1 | Cognitive constraints and thinking styles of low-literate, low-income consumers

We note at the outset that low-literate, low-income consumers face cognitive constraints and difficulties borne out of lack of education and exposure, yet are resourceful in trying to overcome the circumstances and challenges they face. They display certain cognitive tendencies or predilections, accentuated due to a host of challenges they face in the marketplace. Thus, we frame our discussion in terms of constraints, challenges, and tendencies, rather than deficits. Research on low-literate consumers in marketing has examined the day-to-day thinking, feeling, coping, and decision-making of consumers (Adkins & Ozanne, 2005a; Viswanathan et al., 2005). Research in marketing has highlighted cognitive elements such as difficulties with abstraction for low-literate consumers and related cognitive predilections such as concrete thinking and pictographic thinking (Viswanathan et al., 2005, 2009a, 2009b). Adkins and Ozanne (2005a) find that low-literate consumers are highly dependent on external sources of

help for processing marketing information, choosing products, and navigating stores. Viswanathan et al. (2005) observe that low-literate consumers rely on discrete pieces of information related to price, product features and quantity, which can negatively impact purchase decisions. In particular, the authors find that such consumers have difficulties in making higher-order connections between two pieces of information, such as price and package-size, referring to this cognitive predilection as concrete thinking or reasoning. Hence, they may choose the cheapest item on the shelf, without paying attention to the product volume or the unit price. Such concrete thinking extends beyond using single pieces of product information in isolation to interpreting concepts, such as healthiness, nutrition, or even the notion of a consumer, at a concrete level.

Concrete thinking stems from difficulties with abstractions (Viswanathan et al., 2005, 2008). It is reflected in difficulty using information such as price and size to gauge the abstract notion of value (Viswanathan et al., 2009a). Luria (1931) studied low-literate peasants in Central Asia by asking them to describe objects such as a hammer and an ax. Responses did not focus on the abstract concept of tools but rather on how an ax, say could be used to cut firewood from trees and use it heat homes. Low literacy and difficulty with abstractions leads to a focus on the immediate, the visual, the graphic, the sensory, the here and now, and how to use something. Thus, difficulty with abstractions manifests when combining concrete pieces of information to reach a more abstract inference. Therefore, one or a few concrete pieces of information are used as proxy (e.g., the cheapest price).

Indeed, the words we, the literate, take for granted such as customer, unit price, healthiness, or nutrition presume the ability to abstract. “Customer” is a notion that, at a rudimentary level, merely refers to buying from a seller. Meta-cognition in decision-making represents a different level of abstraction, such as in deciding how to decide. Causal inferences between concepts also requires abstraction, all the more so in complex arenas such as health involving different levels of hierarchy as brought out in the recent pandemic—symptoms, conditions, illnesses, and so forth. Causal inferences between gauging value and reaping benefits are similarly challenging due to difficult with abstractions.

Thus, low-literate consumers engage in fundamentally distinct ways of thinking and decision-making, arising from difficulties with abstractions, reflected in cognitive predilections such as concrete thinking. The challenges in engaging in abstract thinking lead to difficulties in understanding the marketplace at a deeper level or in abstracting beyond immediate needs and goals to grasp concepts, such as value and customer orientation, as well as engaging in informed decision-making, self-regulation, and planning for the long term. Concrete thinking can influence what information is collected, how it is processed, and how it is combined. It can impact how consumers infer the relationship between cause and effect, knowing how or why to be effective as customers, and how to set goals in the consumer domain.

Manifestations of difficulty with abstract thinking also extend to excessive reliance on concrete, pictorial information and to pictographic thinking (Viswanathan et al., 2005; 2009a). Jae and DelVecchio (2004) find that low-literate consumers rely on concrete, pictorial information or peripheral cues in marketing messages, which lead to the selection of low-quality, high-priced; (Viswanathan et al., 2009a) products due to information processing difficulties. Beyond reliance on pictorial information, pictographic thinking relates to fundamentally different ways of processing information—imagining usage situations to gauge amounts to purchase rather than using units of measurement, pattern matching numerals, first letters of words, or images of brand signatures to confirm accurate purchase, and adding and subtracting to keep track of the total cost of a shopping cart by visualizing dollar bills (Viswanathan et al., 2005).

Pictographic thinking is also found with regard to the use of nutritional labels (Viswanathan et al., 2009b) and memory for brand signatures (Viswanathan et al., 2009a).

Given the high correlation between low literacy and low income, the studies reviewed above have focused on low-literate, low-income consumers. Other studies on low-income consumers have found that the stress caused by resource scarcity can impede decision-making. Chronic financial deprivation imposes a cognitive burden on individuals, impacting their executive function and decision-making abilities (Mani et al., 2013). As a result of limited cognitive resources, low-income individuals tend to think in the short-term and the immediate, neglecting the long-term consequences of their decisions (Haushofer & Fehr, 2014). When individuals face resource scarcity, they have to attend to the immediately available options and make quick decisions without the means to look for better alternatives (Mullainathan & Shafir, 2013). Such focus on the immediate consequences of decisions with a neglect of the long-term is comparable to low-level, psychologically proximate thinking in individuals with a concrete mindset. Although construal level theory has focused on literate, higher income individuals, it outlines how decisions, when viewed in the near-term than in the long-term, lead to focus on low-level, concrete aspects (Lieberman et al., 2007). Context-dependent factors, such as difficulty in perception or urgency of situation, seem to favor a concrete thinking style among individuals.

The literature suggests that both low-literacy and low-income lead to concrete thinking (e.g., Viswanathan et al., 2005). These insights provided the backdrop to the development of marketplace literacy education using a bottom-up approach (Viswanathan et al., 2009a).

2.2 | Marketplace literacy education

This section provides the contextual background on marketplace literacy education with its unique bottom-up approach. Marketplace literacy, which uses research in subsistence marketplaces as a basis, refers to skills and knowledge as consumers and entrepreneurs (Viswanathan et al., 2008, 2009a, 2021). An educational program covering these skills was developed intuitively as insights from research on cognitive and other constraints emerged. The program aimed to address the cognitive challenges facing subsistence consumers arising from low literacy and accentuated by low income, that is, where cognitive constraints overlay material resource constraints. The central cognitive constraint due to lack of literacy is difficulty with abstract thinking. This is accentuated by material resource constraints and lack of access, and the need to focus on the immediate or proximate.

This program adopts a ‘bottom-up’ approach to teaching marketing education to overcome difficulties with abstract thinking, as uncovered by the research on low-literate, low-income consumers—concretizing and localizing content and delivery (Viswanathan et al., 2009a). Furthermore, in contrast to other education for those with low income and literacy, marketplace literacy education emphasizes know-why in addition to know-how. More than what to buy (or sell) or how, hallmarks of existing programs, it focused on why, or a deeper understanding of the marketplace. Many of the topics covered draw from central concepts taught within the marketing discipline. But unique to the program, this approach builds on consumer experiences bottom-up to stitch together concepts top-down. Again, this is in light of the cognitive constraints and difficulties in abstract thinking due to low literacy and low income, without detracting from the importance of concrete thinking.

Marketplace literacy education is built on marketing education, with a strong emphasis on the importance of gauging value as a customer, or the importance of a customer orientation,

the need to gather information, the need to design products to provide benefits, and the need to communicate and deliver the value proposition. With its micro-level grounding around the customer, marketing is the business discipline that is most required for consumers with lower income and literacy, as it covers the fundamentals of understanding customer needs and serving them. In terms of content, marketplace literacy education covers consumer and entrepreneurial literacy, generic literacy about the marketplace, and sustainability literacy. Consumer literacy specifically covers aspects such as being an effective consumer, the pitfalls in not being informed or in not paying attention when shopping, and so forth. The notion of value for a product is used as the umbrella concept to emphasize informed consumer behavior, covering issues such as bargaining, buying wholesale versus retail, making versus buying, saving, switching stores and questioning sellers, being aware of rights, understanding discounts, paying in installment versus cash, checking prices and totals, planning purchases and preparing shopping lists, and checking expiry dates on packages. The key here is to stitch together bottom-up—the notion of value and the understanding of why to seek it and that it is more than a single factor such as low price. Entrepreneurial literacy covers gathering information, assessing demand and the competition, understanding consumer decision-making, evaluating competition, designing products and pricing to serve needs through a value proposition, and communicating about and delivering the value proposition. Again, the key here is to stitch together bottom-up—the notion of why to choose a business and the “conceptual buckets” of factors to consider. Generic marketplace literacy covers the importance of a customer orientation, the value chain, different groups of customers, different types of needs, and different types of products—goods and services. Key here, say, in emphasizing customer orientation is to stitch together bottom-up—the notion of not having a business if there are no customers. General topics in finance and accounting are also covered. Sustainability literacy covers global and local environmental aspects of being a consumer or an entrepreneur.

Marketplace literacy education has been offered to approximately 100,000 women living in subsistence contexts in seven countries (www.marketplaceliteracy.org). In prior research, marketplace literacy education has been shown to have a positive impact on entrepreneurial self-efficacy and entrepreneurial intentions, and to attenuate the effects of periodic or chronic consumption constraints on these outcomes (Venugopal et al., 2015). The program has been shown to positively impact personal well-being, consumer confidence and decision-making, and entrepreneurial intentions and startups (Viswanathan et al., 2021). However, the program has not been studied at a granular level in terms of its bottom-up versus a top-down educational approach.

2.3 | Top-down and bottom-up approaches in education

In this section, we provide broader context by discussing the general literature on education related to our research. The relationship between learners' conceptual knowledge and the acquisition of procedural skills is an area of active research in educational psychology. Conceptual knowledge refers to higher-level, abstract understanding of the general principles of causal relationships, or understanding why things happen. Procedural skills involve the application of conceptual knowledge to real-life examples and tasks. When acquiring knowledge in a new domain, a learner may progress from understanding concepts to acquiring specific skills to apply this knowledge through examples and application (top-down learning) or adopt the reverse sequence (bottom-up learning) (Sun & Zhang, 2004). An enduring question in this

stream of research is determining which sequence promotes more learning (Rittle-Johnson et al., 2015). One stream of research suggests that conceptual knowledge helps learners creatively invent procedures through an abstraction process, and hence, conceptual knowledge should precede the acquisition of skills (Gelman & Williams, 1998). Yeager et al. (2014) showed that providing students with an abstract motivation for learning rooted around a self-transcendent purpose (as compared to not providing it) was more effective at increasing learning persistence and overall learning in the long run. However, another stream suggests that learning from concrete, real-life examples helps learners understand causal relationships and eventually develop conceptual knowledge by implementing procedures (Siegler & Stern, 1998). A third view is that learning is bidirectional, and both bottom-up and top-down approaches occur simultaneously in the acquisition of new knowledge (Rittle-Johnson & Siegler, 1998). Hence, there is no clear consensus on whether a top-down or bottom-up approach is ideal for learning in a new domain.

An attempt at integration of the two directional approaches was made by Kolb and Kolb (2005) in their experiential theory of learning. The authors suggest that there is a continuum of learners based on their cognitive ability, and where a learner is placed in this continuum may determine the efficacy of the educational approach. At one end are learners who perceive information concretely and process it reflectively by being deeply engaged in the learning activity. At the other end are learners who perceive information abstractly and process it actively through experimentation and risk-taking. Further, the creation of knowledge by the combination of understanding concepts and experiencing phenomena requires both concrete experience and abstract conceptualization (Kolb & Kolb, 2005). In essence, learners moving from the abstract (conceptual) component of knowledge to the concrete (procedural) components may employ more active information processing, requiring greater cognitive effort, and cognitive flexibility. On the other hand, learners moving from the concrete (procedural) components of knowledge to the abstract (conceptual) components may employ reflexive processing, requiring a step-by-step method for assimilating information. Thus, there is evidence that, in some instances, providing concrete skills and experiential information initially before extending to abstract conceptual information is more effective, whereas for others, the opposite sequence is more effective. Hence, the effectiveness of the sequence of an educational program would depend on the characteristics of the target learners.

2.4 | **Construal-level and consumer educational approaches**

Next, we present relevant literature that is closer to the consumer domain. One theoretical vantage point to view the differences in educational approaches and skills relevant to a consumer marketing domain relates to construal level theory. Construal level theory posits that individuals may process stimuli at two levels, concrete and abstract (Trope & Liberman, 2010). The concrete level is operative when events and concepts are proximal and has been associated with a greater concern for feasibility-related issues and an orientation to knowing how to perform key actions. In contrast, the abstract level addresses more distal events and concepts, and has been associated with a greater concern for desirability-related issues and an orientation toward knowing why key actions are to be performed. According to construal-level theory, any decision can be viewed at varying levels of abstraction, from low levels focusing on how the decision is performed, to high levels focusing on why the decision is performed (Freitas et al., 2004). Extant research in consumer psychology provides evidence on how decisions made in the marketplace

can be construed as concrete or abstract, leading to different decision outcomes (e.g., Dhar & Kim, 2007; Liberman et al., 2007; Lynch Jr & Zauberman, 2007). In effect, a consumer can adopt an abstract or a concrete mindset when making product choices. A critical measure to assess variations in construal level thinking style is the Behavioral Identification Form (Vallacher & Wegner, 1987), although it is generic and does not specifically pertain to thinking styles in the marketing or consumer domain.

The construal literature has investigated how construal level mindsets influence consumers' information processing. This literature also suggests that such mindsets can be triggered by how decisions are framed. For instance, Hamilton and Thompson (2007) found that consumers learning about products indirectly (as opposed to direct experiences) tend to adopt a more abstract (concrete) mindset. Several other similar demonstrations have replicated this effect in the context of construal matching with message framing (White et al., 2011), cultural worldview (Spasova & Lee, 2013), and coping behaviors (Han et al., 2016). These effects are explained through a processing fluency mechanism wherein the matching effect leads to perceptual ease of processing that drives comprehension.

These findings suggest that the distinction in thinking styles and the matching effect can determine whether a bottom-up or a top-down approach to education is more effective. That is, when a consumer's focus is on the know-how aspects of a decision, presenting concrete elements of the education program before abstract concepts should be more effective. Conversely, when a consumer focuses on the know-why aspects of a decision, abstract concepts should be presented before concrete elements in the education program.

2.5 | Working hypothesis

Noteworthy here is that construal level theory developed, as has much of psychological research through the study of relatively literate, higher-income individuals. The premise of this work is in capabilities related to concrete and abstract thinking. Thus, when difficulties with abstract thinking are not germane, abstract concepts presented before concrete elements can engender focus on know-why in decisions. We present a counter-intuitive line of reasoning for a working hypothesis in light of the research on low-literate, low-income consumers. Our line of reasoning is that the need for the bottom-up approach to enable know-why or deeper understanding is accentuated by the constraints relating to abstract thinking in low literacy. This presents a unique educational context characterized by new learning opportunities. Our working hypothesis is that, compared to a top-down approach, a bottom-up approach to marketplace literacy education will foster more abstract thinking in the consumer domain. We conducted two studies examining abstract thinking in the consumer domain as the dependent variable for low-literate, low-income samples.

A bottom-up approach to marketplace literacy education, beginning with concrete content, is compared to a top-down approach that emphasizes abstract concepts initially. Thus, the approaches are diametrically opposite in terms of sequence. We test the notion that a bottom-up educational approach to marketplace literacy will lead to more abstract thinking in the consumer domain. As noted, marketplace literacy has been shown in rigorous academic studies to impact a variety of outcomes such as consumer decision-making, consumer self-confidence, entrepreneurial intentions, entrepreneurial startups, and personal well-being. Furthermore, internal assessment has shown impact on consumer savings, self-confidence, and start-up or expansion of micro-enterprises (www.marketplaceliteracy.org). However, the granular study of

its bottom-up approach and the impact on abstract thinking has not been conducted. As marketplace literacy education has emphasized a bottom-up approach, we hypothesize that the program will lead to more abstract thinking in the consumer domain. We note again that the emphasis on the outcome variable of abstract thinking is not to suggest that concrete thinking is not useful. Rather, it addresses the central difficulties that low-literate, low-income consumers face.

3 | STUDY 1

3.1 | Method

Our study context is in South India, among low-income women in the city of Chennai. Chennai is one of the largest cities in India, with a large population of low-income residents (Saharan et al., 2018). Our study participants encompassed full-time homemakers, micro-entrepreneurs, and daily-wage laborers. As a majority of the household consumption decisions are made by women, the marketplace literacy program primarily focuses on women.

We employed a one-factor design (Marketplace literacy program: MLP vs. No MLP). A pre-questionnaire covering demographics was administered across 16 groups of women, with members of each group residing on the same street, and members of different groups residing in different streets, to minimize diffusion of information across groups in an extended field experiment. Marketplace literacy education (MLP) was provided four weeks after pre-measurement to half the groups with random selection (8 randomly chosen groups received MLP and the other 8 did not receive MLP). The marketplace literacy program employs video-based modules and involves sessions over three half-days, for a total of 12 hours of education. Exercises covered include evolution of products, prioritizing elements of a business, the purpose of money, exchanges and the value chain, physical and psychological needs, goods and services, groups of customers, and consumer literacy. The video-based program uses a movie as a stimulating platform and a number of video-based modules with a teacher on a screen, and a facilitator present in-person. The bottom-up approach is used in all exercises such as in covering issues involved in being an effective customer through group discussions, followed by a summary of issues, and an explanation of the abstract concept of value (Online Appendix 3). The post-questionnaire repeated a number of variables from the pre-questionnaire four weeks after the marketplace literacy program. The implementation across the 16 groups was staggered while maintaining the identical time intervals between pre and post measurement and in the timing of MLP education.

3.2 | Outcome measure

The effect of MLP on abstract thinking in the consumer domain was assessed by administering an adaptation of the Behavioral Identification Form (BIF). The BIF is a well-established instrument to assess the degree of abstract thinking (Vallacher & Wegner, 1987). This instrument describes an action along with two choices related to that action (one being abstract and the other being concrete). Here, we adapted the BIF to the consumer context (CBIF). For instance, respondents were given an objective of ‘making a shopping list’ and the choices were—(A) ‘planning purchases’ (abstract) and (B) ‘writing down things to buy’ (concrete). If the

subject chose 'A' (abstract option), it was marked as one (zero otherwise). A total of 18 choices were made by subjects and the responses were added to arrive at the level of abstract thinking as a consumer, termed CBIF (Online Appendix 1 for list of items).

We assessed the content validity of the CBIF measure by asking a separate sample of 31 doctoral students in marketing and other social sciences to categorize the items as abstract versus concrete, leading to an accuracy of 97.8%, with individual items ranging in accuracy from 90% to 100%. We further assessed psychometric properties in the current study and in subsequent studies. We assessed and validated the measure by examining the psychometric properties including the Cronbach's alpha, item-total correlations and average inter-item correlation for the measure (from each of the studies). We also examined the nomological and discriminant validity of the measure using its relationship with general BIF (Online Appendix 2 for results).

3.3 | Results

Descriptive measures are presented in Table 1. The average annual household income of our entire sample is INR 229,840 (USD 3065). The number of years of education are presented in Table 1, reflecting relatively lower literacy levels. As predicted, we find the consumer domain-specific BIF (CBIF) index to be higher for the group that had taken MLP. We use a simple panel regression framework to present the results. We regressed the consumer domain-specific BIF index on the independent variable (MLP vs. No MLP) and time period (0 indicating time period 1, and 1 indicating time period 2), and cluster the standard errors at the street level (as randomization was done at the street level). The results are presented in Table 2. We find the coefficient of Time period * MLP to be positive and significant ($\beta = 5.11, p < 0.001$), indicating that the increase in CBIF for the group that had taken the MLP is significantly higher than that of the group that had not taken it. This result indicates that the respondents who received

TABLE 1 Study1: summary statistics of MLP versus no MLP.

	No MLP ^a	MLP ^a
No. of streets	8	8
Sample size	116	121
Age	35.47	36.47
Education (in number of years)	9.73	10.11
Household		
No. of adults	2.62	2.66
No. of children	0.95	1.10
Income (household in INR) ^b	216,517	242,612
CBIF at time period 1 ^c	6.59	6.94
CBIF at time period 2 ^c	6.52	11.98

^aMLP: marketplace literacy program.

^bAverage urban household annual income is estimated to be INR 482,332 (\$6350) whereas rural household annual income is estimated to be INR 200,533 (\$2640) based on rural and urban per capita income (Sharma, 2019) and average number of people per household (ArcGIS, 2019). In contrast, the overall average in our sample is INR 229,840, indicating that the households in our urban sample are overall, low-income households.

^cDependent variables—BIF in the consumer domain: Sum of 18 items (higher number indicates higher level of abstraction).

TABLE 2 Study 1: effect of MLP on BIF in the consumer domain.

Explanatory variables	Consumer-domain-specific BIF index ^a	
Time period ^b	−0.07	(0.65)
MLP (1 = Yes) ^c	0.36	(1.17)
Time period * MLP	5.11***	(0.94)
Constant	6.59***	(0.89)
Observations ^d	474	
Number of women	237	

Note: Robust standard errors in parentheses.

*** $p < 0.01$.

** $p < 0.05$.

* $p < 0.1$.

^aBIF in the consumer domain: Sum of 18 items (higher number indicates higher level of abstraction).

^bTime period is a categorical variable indicating when BIF was measured; 0—time period 1, and 1—time period 2.

^cMLP: Marketplace Literacy Program (0 for Non MLP condition and 1 for MLP condition).

^dFor each woman, we capture data twice (pre and post) and hence number of observations is twice the sample size of number of women.

MLP showed, on average, a higher level of abstraction than those who did not. Thus, marketplace literacy education, using a bottom-up approach, enhances abstract thinking in the consumer domain relative to a control condition.

Study 1 established the effectiveness of a marketplace literacy program, based on a bottom-up approach, in promoting a greater degree of abstract thinking in the consumer domain. In Study 2, we directly compare a bottom-up versus top-down sequencing of content of the MLP. Study 2 also employed a shorter version of the MLP, a single module on consumer literacy occurring on a single day over 45 minutes, rather than over three half-days.

4 | STUDY 2

4.1 | Method

In Study 2, we employed a one-factor design with three conditions, different variants of the educational program—bottom-up and top-down, and a control group with no education. We conducted Study 2 in the same context as Study 1, in Chennai, South India. Similar to Study 1, our sample consisted of urban, low-income women who have not previously received marketplace literacy education.

Staying with the same sample, in contrast to testing a broad educational program, we tested a controlled and short module. This enabled a relatively more controlled experiment where we isolated and manipulated sequencing, holding other aspects constant. Whereas the broad educational program teaches aspects of entrepreneurial literacy and generic marketplace literacy in addition to consumer literacy, the module in Study 2 focused on consumer literacy only. A consumer literacy module was provided for 45 min which consisted of three distinct parts of equal duration (Online Appendix 3). The bottom-up condition used the same sequence of presentation as was used in Study 1. For the top-down condition, the parts and their sequencing were as follows: (i) the concept of value and give versus get, (ii) a number of topics in consumer literacy

(checking prices, comparing shops etc.), and (iii) a shopping simulation exercise. The approach aimed to isolate and test the effectiveness of the sequence while controlling for all other aspects.

One instructor with more than 15 years of experience in providing marketplace literacy education taught all the sessions. Participants attended the session in groups of ten, all members of the same self-help group, thus controlling for interpersonal influences. There was no repetition of content from the previous part of the module in a latter part—for instance, the bottom-up approach did not reiterate the learning from the shopping exercise when discussing the larger concept. Thus, the only distinction between conditions was the sequencing of the content starting out with behavioral application or abstraction. These artificial aspects enable a strong test of the type of approach. The control group did not participate in any educational module but consisted of similar members of self-help groups who completed the questionnaire. The actual content was scripted out for the instructor as a broad guideline rather than an exact script to follow word-for-word (Online Appendix 3).

4.2 | Measures

One to three days after the end of module for bottom-up and top-down groups, the participants were administered a questionnaire, which was also completed by those in the control group. Whereas Study 1 used the entire program and evaluated delayed effects, here, we allowed a much shorter period of time to examine the effect of a single isolated module. At the same time, the questionnaire was not administered immediately after the exercise as the process of participation in itself could lead to enhanced effects. The short time frame also meant that participants had limited opportunity to try out their learning in their activities as consumers. Thus, the time frame balanced factors that could affect outcomes with immediate or too long a time frame between exercise and questionnaire. Basic demographic information including age, education (number of years of education), marital status and occupation were measured. A total of 120 responses were collected (40 in each group).

The same consumer-oriented BIF scale used in Study 1 was employed in Study 2. To identify the differential impact of the two methods (bottom-up and top-down) on overall program evaluation, respondents (only in the two groups that received MLP) answered three items on a 5-point Likert scale (1-strongly disagree to 7- strongly agree): (i) I believe the exercise I completed will help me avoid bad decisions, (ii) I believe the exercise I completed will help me save money, and (iii) I believe the exercise I completed will prevent me from paying too much. Responses to these three items were added and an index was formed to represent the ‘evaluation of educational module’ measure. Additionally, respondents also completed the general BIF scale so that we could compare and contrast with and provide validity tests of the consumer-domain-specific BIF scale.

4.3 | Results

The summary statistics of the key metrics are presented in Table 3. The number of years of education are presented in Table 3, reflecting relatively lower literacy levels.

We assess the effect of our manipulation (control, bottom-up and top-down) on dependent measures using linear regression. The dependent measures include: (i) consumer-domain-specific BIF,

TABLE 3 Study 2: summary statistics of control, bottom-up and top-down conditions.

Measure	Control	Bottom-up	Top-down
Sample size	40	40	40
Age	38.40	41.98	36.55
Education	7.78	8.30	8.15
Income ^a	4138	6750	6488
BIF consumer ^b	8.38	13.07	11.53
BIF general ^c	11.23	13.45	13.13
Evaluation of educational module ^d	-	14.65	13.60

^aMonthly income in INR.

^bBIF in the consumer domain: Sum of 18 items (higher number indicates higher level of abstraction).

^cGeneral BIF: Sum of 20 items (higher number indicates higher level of abstraction).

^dEvaluation of education module: Sum of responses to 3 items (7-point Likert scale).

TABLE 4 Study 2: comparing control, bottom-up and top-down conditions.

Explanatory variables	BIF consumer		BIF general		Evaluation of educational module ^a	
Bottom-up (=1)	5.18***	(0.45)	2.54***	(0.55)		
Top-down (=1)	2.75***	(0.51)	1.33	(0.78)	-1.09***	(0.29)
Age	-0.01	(0.05)	0.00	(0.04)	0.00	(0.03)
Education	0.26	(0.20)	0.12	(0.30)	-0.01	(0.06)
Income ^b	-0.00	(00)	0.00	(0.00)	0.00	(0.00)
Constant	5.35	(3.82)	8.26	(5.00)	15.23***	(1.79)
Number of women	120		120		80	
R-squared	0.42		0.27		0.30	
Marital status	Yes		Yes		Yes	
Occupation	Yes		Yes		Yes	

Note: Robust standard errors in parentheses.

*** $p < 0.01$.

** $p < 0.05$.

* $p < 0.1$.

^aItems on evaluation of educational module were collected only for Bottom-up and Top-down conditions. Hence the coefficient of Top-Down indicates the effect on outcome with respect to bottom-up.

^bThe coefficients of monthly income were small. We also conducted robustness tests with $\log(\text{income})$ with a reduced sample size of 84 (as others have reported 0 income) and the results were overall consistent.

(ii) general BIF, and (iii) evaluation of educational module. We control for age, education, marital status and occupation of the respondents. As the randomization was implemented at the self-help group level, we cluster the standard errors at that level. Results of the linear regressions with clustered standard errors are present in Table 4.

Results suggest consistently that the bottom-up approach had significant positive effects on the CBIF and a measure of the evaluation of the program (compared to the control group). Similarly, the top-down approach had significant positive effects on these variables (compared to the control group). We compared the coefficients of bottom-up and top-down approaches

statistically. We find that bottom-up approach had a higher effect than the top-down for consumer-domain-specific BIF ($\beta = 2.430, p < 0.001$). In the case of general BIF, we find the difference between bottom-up and top-down to be non-significant, while the bottom-up was significantly higher than the control. The advantages for bottom-up occur to a greater degree for consumer domain-specific rather than for general abstract thinking.

Finally, we also examine the difference in the evaluation of educational module (only bottom-up and top-down groups; Table 4). We find that compared to the bottom-up approach, the top-down approach had a weaker effect on the dependent variable.

Study 2 provided additional evidence for the effectiveness of marketplace literacy education in promoting abstract thinking in the consumer domain. Further, Study 2 showed that both top-down and bottom-up approaches resulted in more abstract thinking than the control. More importantly, Study 2 also allowed for a direct comparison in terms of whether a top-down or a bottom-up approach resulted in greater abstract thinking in the consumer domain. The results are consistent with the prediction that a bottom-up approach leads to a greater ability to think abstractly in the consumer domain.

5 | GENERAL DISCUSSION

5.1 | Summary of studies

In Study 1, the entire marketplace literacy program, with its bottom-up approach that evolved to overcome cognitive constraints that subsistence consumers face, was shown to have a positive impact on abstract thinking in the consumer domain. Study 2 artificially isolated certain elements relating to delivery of content—bottom-up versus top-down. As predicted, despite the artificial rendering of a single educational module with strict sequencing and no carryover, the bottom-up approach was found to have a positive impact on abstract thinking in the consumer domain in Study 2, when compared to the top-down approach or a control. A positive evaluation of the education itself was found at a significant level when pitting bottom-up against top-down in Study 2. These results support the importance of the bottom-up approach, particularly due to cognitive constraints faced by low-literate, low-income consumers. They are counterintuitive when considered in light of past literature in construal level theory, which has typically focused on more literate consumers with higher income levels. According to this literature, initially focusing on abstraction might enable consumers to more effectively visualize the abstract principles associated with consumer behavior.

5.2 | Implications

The literature in education discusses the effectiveness of sequencing concrete skills and experiential information before or after abstract conceptual information. We show the efficacy of a bottom-up approach for consumer and marketing education that begins with the concrete. Our pathway to conceptualization, based on research insights, informs the marketing educational practices developed for low-literate, low-income consumers within the subsistence marketplace stream. Our reasoning for the bottom-up approach's higher effectiveness stems from the abstract thinking challenges faced by low-literate, low-literate low-income individuals.

We study the design and delivery of consumer and marketing education, addressing an arena lacking sufficient research in recent times in consumer affairs. Our granular approach in terms of sequencing of content in consumer education is unique in this regard. This research makes several important contributions to the consumer and marketing education literature. We provide evidence for the effectiveness of a bottom-up approach to marketplace literacy education through a three-half day program and in a 45-minute module in promoting abstract thinking in the consumer domain for low-literate, low-income consumers. As noted, our research does not detract from the importance of concrete thinking. Rather, the bottom-up approach to enable abstract thinking addresses the cognitive difficulties in this arena for low-literate, low-income consumers. We validate a new consumer-related behavioral identification form for use by marketing education researchers to assess abstract thinking in the consumer domain. The newly validated measure is also useful as a contextualized consumer-relevant alternative to the more general BIF that is widely used across marketing and psychology.

Our research brings out the importance of consumer and marketing education, which is the predominant disciplinary content in the marketplace literacy educational program. Indeed, marketing with its uniquely micro-level customer focus among business disciplines, represents the first layer of the onion for individuals in subsistence contexts to understand the marketplace. Yet, these very circumstances constrain thinking abstractly in the consumer domain and deeper understanding of key marketing concepts such as value. We show the effectiveness of the bottom-up approach in enabling abstract thinking in the consumer domain. A logical starting point for consumer education appears to be a shopping exercise which brings out a number of concrete aspects that can then be stitched together bottom-up to arrive at abstract notions such as value. We also note the importance of a broader understanding of marketplaces, including the seller side, characterizing marketplace literacy education. Connecting concrete dots or lived experiences so to speak, bottom-up, across buyer, seller, and marketplace, leads to abstract thinking in the consumer and related domains.

A literature search suggests that bottom-up consumer education is rare, and even so not at the granular level of content and delivery. As mentioned, research in the *Journal of Consumer Affairs* touches on top-down versus bottom-up efforts toward sustainable consumption (Teufer and Grabner-Kruater, 2023), mindful consumption (Parvatiyar & Sheth, 2023); and empowerment through financial education (Luukkanen & Uusitalo, 2019). A review of European initiatives in consumer education mentions the importance of a bottom-up approach (Goldsmith & Piscopo, 2014). Beyond consumer education, the bottom-up approach in non-formal, livelihood, or entrepreneurship education for low-literate, low-income consumers requires more attention. Methods such as participatory action research have much potential in designing and delivering consumer and related education in this regard. For instance, a bottom-up approach to incorporating women's perspectives in informal economies has been presented for technical and vocational education (Witenstein & Iyengar, 2021). Thus, research about ground realities as it relates to consumer and related education is needed as is the translation of insights to the design and delivery of education. This paper demonstrates the study of such translation.

5.3 | Limitations, implications, and future research directions

Our research has a number of limitations, some being characteristics of the set of studies that are typically within the scope of an article. More specifically, we controlled a number of variables to isolate and manipulate the sequence within a single module. We acknowledge here

how, much of learning is in the richness of discussions, and spillover of learning occurs within and across modules. However, our goal was to carefully separate sequence from other factors. Future research should also examine a variety of facets of bottom-up—local facilitators, local examples, local community setting, and so forth. The underlying processes need to be tested empirically in greater detail for the findings reported here. Finally, future research should also examine outcome variables such as actual decision-making and choices.

This research suggests a number of future pathways in consumer affairs. Our research provides a starting point to understanding how such education can be more effective by using a bottom-up approach for low-literate consumers in enabling abstract thinking in the consumer domain, and for higher-literate consumers in enabling better choices. Research is needed on specific consumer educational content, exercises, lessons, and programs in terms of how the bottom-up can be interwoven with the top-down to maximize positive impact. In this regard, a variety of outcomes need to be assessed beyond abstract thinking, including consumer decision-making and confidence. Also important among outcomes is the traversal from concrete to think abstract thinking and back; referred to as concrete-abstract fluency (Viswanathan & Lalwani, 2020). Consumer and marketing education when considered for vulnerable consumer segments, pushes the boundaries of literacy to functional arenas central to people's lives and roles as customers and marketers. Marketplace literacy is not so much about basic literacy but about functional literacy in the marketplace. The types of educational approaches and content that can engender abstract thinking in the marketplace domain is the focus of our research. In turn, research should examine how consumer and marketing education can enable development of basic literacy. For instance, how can completing a consumer task relating to computations at a fast-food restaurant or reading product information at a grocery store lead to development of basic numeracy and literacy? And what educational approaches—such as bottom-up versus top-down sequencing or know-why versus know-how framing—would enable such translation of abilities across types of literacy? Our insights on consumer and marketing education also have implications for designing products and communications to audiences with varying degrees of literacy. Bottom-up versus top-down maps onto different ways of communicating from individualizing to base-rate information research to crowdsourcing for product ideas. We provide a basis for communicating new product information to consumers using a bottom-up approach.

At a theoretical level, these findings also contribute to the literatures on education and construal level as well as the intersection between the two. Study 2 found support for the advantages of a bottom-up approach in promoting abstract thinking. This counter-intuitive result suggests that, by focusing on low construal benefits in subsistence contexts, these consumers are better able to engage in abstract thinking, consistent with a high-level construal mindset. These findings also run counter to much of the construal literature which has developed by studying relatively literate populations who can engage in thinking at different levels of abstraction. However, this assumption is challenged with the individuals we studied, who comprise much of humanity. Our results showing the superiority of a bottom-up approach suggest that construal matching may not be as important among low literacy, low-income consumers. We also emphasize an educational context whereas much of construal level theory has examined contexts of day-to-day tasks. To our knowledge, this is the first paper that shows that a concrete construal mindset when matched with a bottom-up approach (a combination that would normally produce a low-level construal focus) actually produces an abstract thinking mindset that matches with high level construal consumer decisions. Our research extends construal

matching to a consumer and marketing education context to show how bottom up and mindset matching actually facilitates greater learning and improved decision-making.

In conclusion, our research brings out the importance of carefully designed consumer and marketing education for subsistence consumers. Consumer and marketing education is critically important for subsistence consumers and marketers, more so than any other business discipline. However, such education has to be designed to enable abstract thinking and deep understanding that places people on a pathway to learn how to learn. And effective educational approaches to engender abstract thinking may be counterintuitive as the ability to think abstractly may be distinctly different for low-literate, low-income consumers.

AUTHOR CONTRIBUTIONS

Madhu Viswanathan: Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; validation; writing – original draft; writing – review and editing. **Saravana Jaikumar:** Conceptualization; data curation; formal analysis; methodology; validation; visualization; writing – original draft; writing – review and editing. **Arun Sreekumar:** Conceptualization; investigation; methodology; writing – original draft; writing – review and editing. **Shantanu Dutta:** Conceptualization; methodology; writing – original draft; writing – review and editing. **Adam Duhachek:** Conceptualization; methodology; writing – original draft; writing – review and editing.

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ENDNOTE

¹ As noted, subsistence consumers have low income, and likely to possess relatively low literacy. We use the term, low-literate, low-income consumers for ease of use. Relatively low literacy levels are borne out subsequently in the samples used for our studies. “Low-literate” is an approximate term, as typically, the range will be from no education to high school levels; the latter could be characterized as moderate literacy. We note here that the quality of schools is a factor to consider when assessing the actual level of reported education.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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