INVENTORY DECISIONS IN SMALL BUSINESSES IN HOSPITALITY SECTOR: MENTAL BUDGET IN THE VIEW OF RESOURCE-BASED THEORY

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Overview

- In this work we aim to build a theory of mental budget as a capability of a manager to make decisions on purchasing inventories that can assure strategic competitive advantage to the firm
- What management literature says about inventory management and its applicability to small business practice
- What is mental budget
- Extension of mental budgeting to inventory decisions by small business owners
- Mental budgeting as a source of competitive advantage
- Implications of mental budgeting to the management of small businesses

How do firms manage their inventories?

- Inventory management contributes to the competitiveness of the firm:
  - Satisfy variable demand
  - Keep the costs low
- In the food industry, for example, having the right quantity of quality raw materials is an integral part of success of the business:
  - Highly perishable goods on inventory
  - Highly variable demand
  - Variable supply
- Getting the right quantity of inventory to keep becomes of strategic importance for being competitive

How inventories are managed

- Optimal quantity of goods to keep in inventory – economic order quantity
  - The lot size, *Q*, that minimizes total annual inventory holding and ordering costs
  - Five assumptions
    - Demand rate is constant and known with certainty.
    - No constraints are placed on the size of each lot.
    - The only two relevant costs are the inventory holding cost and the fixed cost per lot for ordering or setup.
    - Decisions for one item can be made independently of decisions for other items.
    - The lead time is constant and known with certainty.

Calculating EOQ

- The EOQ formula:

$$\mathbf{EOQ} = \sqrt{\frac{\boldsymbol{2DS}}{\boldsymbol{H}}}$$

- Experiments with newsvendor problem
  - Single item
  - Variable demand
  - Perishable good
  - Individuals consistently deviate from the optimal value (Schweitzer and Cahon, 2000; Benzion et al, 2007)
  - Undergraduate students, MBA students and managers deviate from optimal solution (Bolton et al., 2008)

Calculating EOQ

- Real conditions
  - demand is variable,
  - discounts can be applied,
  - perishable good,
  - several items may constitute the same lot
- Simulations should be used to derive the optimal quantity
- The owners of small businesses can hardly afford doing these calculations
  - Too complicated
  - Effort is not worth the time

Mental budget

- Not being able to get optimal solution individuals go for satisfactory solution (Simon, 1955)
- Research in consumer behavior shows that consumers use **mental budgets** to control their purchasing behavior (Heath and Soll, 1996)
  - Mental budgets are used "to facilitate making rational trade-offs between competing uses for funds" (Thaler, 1999, p. 11)
  - Allocate available budget to different categories of expenditures (food, clothing, entertainment, etc.)
  - This allocation is binding – consumers track their expenditure within a category (Heath and Soll, 1996):
    - if the category budget is reached the spending in the category is stopped
    - If the budget is not reached not strongly desired purchases can be made

Mental budgeting in consumer research

- Evidence of mental budgeting consumer behavior:
  - Consumers use mental budgets to manage their finance (Antonides et al, 2011)
  - Consumers have mental budgets for groceries in general (Heath and Soll, 1996; Heilman et al., 2002)
  - Consumers tend to form mental budgets on each grocery shopping trip (POPAI, 1995)
  - Consumers form mental budgets for Christmas market shopping (Brida and Tokarchuk, 2013)

Theory of mental budgeting for small business owners (SBO)

- Owners of a small businesses (SBO) use competencies they accumulate in their life as consumers also in their business
- The aim of the use of mental budget is to keep the costs of inventories under control
- We assume that SBO sets the total budget that can be spent on inventories
- SBO divides expenditure on inventories in different categories – **labeling** (for example, goods that need to be replenished everyday, goods that need replenishment once a week, etc.)
  - Labeling is individual

Theory of mental budgeting for small business owners (SMB)

- The available budget is distributed among established categories
- SBO keeps track of expenses on different categories. When the budget of a category is reached no more items in the category will be acquired – **budgets are binding**

Theory of mental budgeting for small business owners (SMB)

- The optimal decision, economic order quantity, decides on the **optimal quantity** to keep
- Mental budget looks at a **monetary value** that can be spent
- Mental budgeting does not provide optimal solution
  - It helps to reduce the decision costs
  - With learning it can lead to good performance
- Mental budget’s solution is individual

Boundaries of mental budgeting

- Research in consumer behavior suggests that
  - mental budget is more present for regularly, routine expenditures (like grocery shopping in consumer research)
  - Mental budget is more present for items of lower monetary value

- Mental budget is relevant for the management of small businesses in food industry

Measurement of mental budget

- Mental budget scale from Antonides et al. (2011):

  1. I have reserved money (budget) for different expenses, such as food, clothing, transportation, etc.
  2. I never spend more than a fixed amount on food, clothing, transportation, etc.
  3. If I spend more on one thing, I economize on other expenses.

  4. If I spend more than normal on one thing in 1 month, I spend less on other things in the next month.

Mental budgeting as a source of sustained competitive advantage

- We claim that mental budgeting is a resource that can maintain competitive advantage of the firm
- Resource based theory (Barney, 1991, p. 102)

"A firm is said to have a *sustained competitive advantage* when it is implementing a <u>*value creation*</u> strategy that is not simultaneously followed by other firms or potential competitors and when these other firms are <u>*unable to duplicate*</u> the benefits of this strategy"

Mental budgeting as a source of sustained competitive advantage

- **Resources need to be:**
  - ‘valuable’ (V) – they create value for the firm and for the customer
  - ‘rare’ (R) – the resources should not be widely available in the market
  - ‘inimitable’ (I) – it should be hard for other firms to copy the resource
  - ‘non-substitutable’ (N) – substitution of the resource should lead to the loss of competitive advantage

- **Mental budgeting**
- Creates value for the customer, creates value for the firm
- Is rare as it is based on individual capabilities and experience
- It cannot be imitated as different individuals will assume different labeling, will assign differently the budgets to different
- The direct substitute for mental budget is economic order quantity but it is too costly for small businesses to provide value

Implication of mental budget for small business inventory management

- Research in consumer behavior suggests that:
  - Mental budgets are binding: once the category budget is reached no more items will be purchased (Heath and Soll, 1996)
    - Owners may loose profitable opportunities of quantity discounts as with the required quantity they may overcome the category budget
    - Mental budget may prevent owners to risk with more inventories when one-shot peak demand is expected – lost of revenue

Implication of mental budget for small business inventory management

- Research in consumer behavior suggests that (cont.):
  - Money saved due to discounts on the item will be spent within the same category of the discounted item

- Method of payment has influence on the expenditure:
  - When paying in cash consumers spend less compared to what they are willing to spend when using non-cash methods of payment
  - Consumers are less willing to spend savings on a durable unless they explicitly

Implication of mental budget for small business inventory management

- Research in consumer behavior suggests that (cont.):
  - Method of financing influences inventory decisions (Chen et al, 2013)
    - Under self-financing individuals tend to overspend in inventories compared to their spending under customer financing
    - Supplier-financing positions between self- and customer-financing. It provides the best approximation of optimal economic order size solution

Conclusions

- Research in consumer behavior suggests that mental budgeting will be pervasive also in business, especially in businesses that are affected by unpredictable demand and perishable goods hold in inventory
- Mental budgeting as a capacity to keep the costs of inventories under control constitutes a source of competitive advantage from the point of view of Resource based theory
- Mental budgeting is a promising area of study for B2B applications for small business

Future research

- Research questions:
  - Does the mental budget exist and how pervasive is it in small business
  - How labeling is performed
  - How mental budgets are formed
- Method:
  - Qualitative interviews with small business owners in food and hospitality sector
  - Laboratory experiments
  - Field study

THANK YOU

- Comments are welcome to:

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