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Consumer Logistics and the Purchasing Process for Fast
Moving Consumer Goods

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Table of Contents

| | |
|---|-----|
| Table of Contents | I |
| List of Figures | III |
| List of Tables..... | IV |
| List of Abbreviations..... | V |
| 1 Introduction | 1 |
| 1.1 Research Objective | 2 |
| 1.2 Way of Argumentation | 3 |
| 2 Consumer Logistics..... | 5 |
| 2.1 General Introduction..... | 5 |
| 2.2 Conceptualizing Consumer Logistics..... | 5 |
| 2.3 Consumption Related Behavior..... | 12 |
| 2.4 Logistical Shopping Patterns | 15 |
| 3 Methodology | 17 |
| 3.1 General Introduction..... | 17 |
| 3.2 From Grounded Theory to “Grounded Approach” | 17 |
| 3.2.1 A brief Background on Grounded Theory | 17 |
| 3.2.2 Ethnography and Participant Observation..... | 19 |
| 3.2.3 Development of the Instrument “Grounded Approach” | 19 |
| 3.3 Research Design | 20 |
| 3.3.1 Sample and Procedure of the Research | 20 |
| 3.3.2 Observation of Participants | 22 |
| 3.3.3 Interviewing Participants..... | 23 |
| 3.3.4 Analysis of the Content | 23 |
| 4 Data Gathering and Analysis..... | 25 |
| 4.1 General Introduction..... | 25 |
| 4.2 The Structure of the Investigation | 25 |
| 4.3 Household I..... | 27 |

| | | |
|-------|---|----|
| 4.3.1 | Investigating Household I | 27 |
| 4.3.2 | Identification of Core Categories | 29 |
| 4.4 | Household II | 30 |
| 4.4.1 | Investigating Household II | 30 |
| 4.4.2 | Identification of Core Categories | 32 |
| 4.5 | Household III | 33 |
| 4.5.1 | Investigating Household III | 33 |
| 4.5.2 | Identification of Core categories | 35 |
| 4.6 | Household IV | 36 |
| 4.6.1 | Investigating Household IV | 36 |
| 4.6.2 | Identification of Core Categories | 38 |
| 4.7 | Comparison of the Households | 39 |
| 4.7.1 | Establishment of common Categories | 39 |
| 4.7.2 | Dimensioning the four Households | 43 |
| 5 | Theoretical Sampling | 48 |
| 5.1 | General Introduction | 48 |
| 5.2 | Describing Consumer Logistics | 48 |
| 5.3 | A Prescribing of Consumer Logistics | 56 |
| 6 | Summary and Conclusions | 59 |
| 6.1 | Contributions to Consumer Logistics | 59 |
| 6.2 | Limitations and Implications for further research | 61 |
| | References | A |
| | Appendix | E |

List of Figures

| | |
|--|----|
| Figure 2-1: A Process Model of Consumer Logistics Decisions | 7 |
| Figure 2-2: Inventory based Decision-Tree | 8 |
| Figure 2-3: Central Determination Factors of Consumer Behavior | 14 |
| Figure 3-1: A visual Representation of Grounded Theory..... | 18 |
| Figure 3-2: A Blueprint of the Grounded Approach | 24 |
| Figure 5-1: An Optimal CL Process..... | 53 |
| Figure 5-2: A Representative CL Process | 54 |
| Figure 5-3: A Descriptive Process Model of Consumer Logistics..... | 55 |
| Figure 5-4: Related Information Flows due to Order Processing | 57 |

List of Tables

| | |
|--|----|
| Table 2-1: Identified Consumer Logistic Functions | 11 |
| Table 3-1: Characterization of the Sample..... | 21 |
| Table 4-1: An Example of Initial Coding..... | 27 |
| Table 4-2: Stores nearby and Properties of Household I | 28 |
| Table 4-3: Core Categories of Household I | 29 |
| Table 4-4: Stores nearby and Properties of Household II..... | 31 |
| Table 4-5: Core Categories of Household II..... | 32 |
| Table 4-6: Stores nearby and Properties of Household III..... | 34 |
| Table 4-7: Core Categories of Household III..... | 35 |
| Table 4-8: Stores nearby and Properties of Household IV..... | 37 |
| Table 4-9: Core Categories of Household IV..... | 38 |
| Table 4-10: Category Schemes of the Households | 40 |
| Table 4-11: Differentiating between Strategy and Operation | 41 |
| Table 4-12: Bringing Categories in Relation | 42 |
| Table 4-13: Eight Dimensions as a Basis for Comparison..... | 43 |

List of Abbreviations

| | |
|------|-----------------------------|
| CC | Core Category |
| CL | Consumer Logistics |
| ECR | Efficient Consumer Response |
| FMCG | Fast Moving Consumer Goods |
| GT | Grounded Theory |
| H&S | Handling and Storage |
| OOS | Out-of-Stock |
| POC | Point of Consumption |
| POS | Point of Sale |
| SCM | Supply Chain Management |

1 Introduction

Granzin and Bahn (1989) provided a new field of study under the name of Consumer Logistics (CL). They recognized that Industrial Logistics, and Supply Chain Management¹ (SCM) as well, only consider the distribution of goods up to the Point Of Sale (POS), and therefore neglect the “last mile” to the Point Of Consumption² (POC). This gap in the literature includes the linkage between the retailer and the household, which the consumer bridges by undertaking logistics activities. By considering the view of the consumer, these activities can be summarized as the planning and operation of a shopping trip. Shopping is therefore the procurement of goods and in parallel, the fulfillment of the household’s needs. From the SCM perspective, a household consisting of one or more consumers can be seen as an organization or a system, which distributes the products to the POC. CL can therefore be defined as the efficient management and procurement of final products, carried out by the consumer in order to fulfill the household’s consumption needs (Granzin, 1990).

The distribution of goods from the POS to the POC can either be done by the consumer, or by a third party. So understanding CL can allow for insights to be gained on how this decision is made, and therefore build a research basis to derive implications for the parties involved in the distribution of final products to the POC. While consumer goods include a wide range of final products, Fast Moving Consumer Goods (FMCG) influence our daily routines the most, as they represent the majority of our basic needs (Baxter and Moosa, 1996). Grocery shopping is undertaken very frequently, often planned, and includes the handling and transportation of several goods at one time (Kotler and Keller, 2012).

According to the yearly published Nielsen³ survey of consumers’ attitudes towards grocery shopping, 58 percent of consumers stated that they plan purchases precisely by using a shopping list. Furthermore, 60 percent like to shop at stores, where shopping is done quickly. 69 percent of consumers pay attention to price promoted products. These insights assume that households perform shopping (logistics) to a certain degree efficiently, effectively, and rationally (Nielsen 2013).

¹ Supply Chain Management: SCM can be referred to the integration of business processes (see. e.g. Larsen et al. 2007). Cooper, Lambert, and Pagh (1997 p.2) define SCM as “[...] the integration of business processes from the end user through original suppliers that provides products, services and information that add value to customers.” (see also e.g. Lysons, and Farrington 2012; Chopra, and Meindl 2014).

² Point of Consumption: POC is viewed as the place, where the consumer stores the purchased items inside the dwelling, and not the place where consumption takes place.

³ Nielsen: An information measurement company that studies consumer trends and habits worldwide. Headquarter: New York City, NY, United States of America (see for further information www.nielsen.com).

Although today's online food retailing has become more popular, most consumers still prefer shopping at stationary stores, such as supermarkets, hypermarkets and discounters (Ernst & Young (EY) 2014). Research on CL closes the previously mentioned gap in the literature and might offer new perspectives to describe and explain the decisions and activities that constitute specific consumer behavior.

1.1 Research Objective

However, most of research on CL has been made by conceptually and deductively applied approaches so far, and shape CL in a descriptive way (see e.g. Granzin and Bahn, 1989; Granzin, 1990; Teller and Kotzab, 2004). Prescriptive research on the other hand is still lacking, as only a few contributions have been made in regards to the optimization of CL in terms of efficiency and effectiveness (see e.g. Granzin, Painter, and Valentin, 1997). This study attempts to assess CL in an inductive and interpretive way to develop new theory, and to continue the descriptive CL model from Granzin and Bahn (1989). Therefore, the following research question guides this study to developing and applying a new approach that hopefully accomplishes the study's objective with new insights on CL:

- **What insights can we gain about Consumer Logistics, by studying the actions and decisions of consumers as they engage in shopping for groceries and managing their households?**

Although CL might hold for all kinds of consumer goods, this study focuses on FMCGs, and in specific on groceries. As previously mentioned, CL seems to be especially relevant in regards to the management and operation of grocery shopping. So the consumer's engagement in FMCGs establishes the field wherein this study operates.

Four different types of German households provide the sample to conduct field research. The sample represents four extreme cases, as the households differ to their structures (dwelling properties, income, household members, etc.) and their type of shopper. By applying a tailor made "Grounded Approach" methodology, the household's engagement in CL is captured and analyzed. Insights from the investigations provide the basis for theoretical sampling⁴, which accomplish the research objective.

⁴ Theoretical sampling: Here it means the researcher's attempt to explain the investigated phenomenon, by building hypotheses and conceptualizing theory.

1.2 Way of Argumentation

In order to gain a comprehensive understanding on CL, the study starts by providing the theoretical background (Chapter 2). CL is thereby conceptualized as a system, according to the descriptive model from Granzin and Bahn (1989). Components of the system, especially the structure and its process are considered, whereby the independence of single elements is further pointed out. The CL system is viewed as an input-throughput-output system, whereby the system performance is related to determination and evaluation factors. Moreover, a marketing perspective is chosen to characterize groceries in terms of consumption related behavior. Therefore, types of purchase decisions, and decision makers are brought into the context of grocery shopping. Chapter 2 further deals with CL patterns, which refer to demographics, shopping habits, and store types. The understanding of a CL system, consumption related behavior, and CL patterns furnish the theoretical underpinnings for the later investigation.

Having a theoretical background in mind, a “Grounded Approach” methodology is developed (Chapter 3). The basis for this approach is constituted from Grounded Theory (GT) from Glaser and Strauss (1967), and ethnographic method participant observation. Unbiased of any theory, this approach tries to offer new insights from the field (grocery shopping). While the conducted ethnographic methods collect information that describe the social phenomenon “grocery shopping”, knowledge from the theoretical background is treated as part of this data. Core categories (CC) capture information and findings from the investigation and are the basis from which a new theory can rise, or the existing one can be continued. In contrast to most research on logistics, that is characterized by positivism, and sets objective reality as criterion to secure rigor, this study is inductive (Kaufmann and Denk 2011). Because shopping is viewed as a social phenomenon, “Grounded Approach” has to consider other reliability criteria. According to the contributions from Kaufmann and Denk (2011), this study attempts to proceed transparently, whereby the following criteria hold to secure reliability: credibility, dependability, conformability, and transferability (Wallendorf and Russel, 1989). In regard to “Grounded Approach”, the research design is developed and composed as a guideline that later provides guidance for the applied qualitative analysis.

Chapter 4 describes the investigations and illustrates the process of data gathering and analysis. Because each of the four households is investigated independently, the chapter starts with an explanation of the procedure in general. Afterwards, the four cases are reviewed in separate sections. Each of these sections covers a detailed description of the household structure and the execution of the Grounded Approach methodology. Therefore, data gathering is presented transparently in order to provide a comprehensive understanding of the analysis that ends in core categories of a coding scheme. Afterwards, the four different category schemes are used to develop criteria (dimensions), which enable a comparison of the

four types of households. The chapter ends by emphasizing commonalities and between the four examined shopping trips in regards to the identified dimensions.

Theoretical sampling (Chapter 5) is conducted interpretatively and starts with a descriptive section. Insights from the investigation and findings from literature constitute the basis for deriving assumptions to conceptualize CL. Therein a process model is suggested, which illustrates the investigated household's engagement in CL. By proposing an optimal CL process, a benchmark is set to point out CL performance in regard to efficiency and effectiveness. While CL is described as a system, based on interpretative assumptions, propositions are derived in regard to system performance. Based on that, CL is further prescribed, how to be efficient and effective. The chapter ends with an illustration of possible "docking points" for initial solutions to optimize CL performance.

Chapter 6 summarizes the findings from this study and contributes an outlook for further research on Consumer Logistics.

2 Consumer Logistics

2.1 General Introduction

In order to satisfy their needs, consumers participate in the distribution of goods, as they plan and conduct shopping trips to procure goods. They further support the movement and handling of goods from the POS to the POC. This fact constitutes the still young research field of consumer logistics that is mainly dominated by the works of Granzin and Bahn (1989) and Granzin (1990). While they provided a descriptive conceptualization of consumer logistics, further research on CL included the linkage of CL with consumer behavior (Granzin, Painter, and Valentin, 1997), consumer's perception on CL (Teller and Kotzab 2004), and consumer logistics activities in regard to retailer types (Teller, Kotzab, and Grant 2006). In order to provide theoretical background on CL, this chapter discusses CL in the context of Granzin and Bahn (1989), and how they relate to consumer-related behavior.

Chapter 2.2 presents the descriptive Model of CL. Therein, a general process model of CL will be introduced, which offers decision areas that mainly constitute the CL process of the household system. Afterwards, the consideration of five logistic subsystems furnish a more detailed perspective of system structure and its process. The CL system is further described as an input-throughput-output system, whereby resources are outlined that promote the CL process. Chapter 2.2 then presents the findings from an empirical investigation from Granzin (1990) and relates this to the determination and evaluation of system performance. Chapter 2.3 relates to research on buying behavior and characterizes groceries in terms of consumption related behavior. Households are viewed from a social perspective to explain the types of decision makers in the context of grocery shopping. Afterwards, the chapter refers briefly to the central determination factors that constitute specific consumer behavior. With an overview of different kinds of purchase decisions, habitual and impulsive purchasing are associated to the shopping of groceries. Chapter 2.4 deals with consumer logistic patterns. It starts with the assumption that consumers undertake logistic activities in a habitual manner, and presents the findings from Teller and Kotzab (2004). Moreover, household demographics and shopping behavior are related to CL. The chapter ends with CL patterns due to visited store types by Teller, Kotzab and Grant (2006).

2.2 Conceptualizing Consumer Logistics

The task of logistics can be defined as to provide [...] the right quantities of goods most efficiently at the right place in the right order within the right time" (Gudehus and Kotzab, 2012, p.3). Households undertake logistics as members share consumption goals and assign others or themselves to fulfill orders. Moreover, by providing space and time, the household covers their needs of consumption. Granzin (1990 p.239) defines consumer logistics as a complement to business logistics, which includes all activities of the consumers that "[...]

support the handling of goods from the point of acquisition [...] to the point of consumption, or other disposition". Although logistics comprises the accomplishment of objectives in regards to effectiveness and efficiency, household organizations do the same with reduced scope (Granzin 1990).

Because, households consist of members, which interact as they plan and operate together, the activities and decisions interrelate. This interrelatedness constitutes an organization and therefore a system. The consideration of a household's decisions and activities due to the movement and storage of goods, led Granzin and Bahn (1989) to build a descriptive model of CL, by using a systems approach. A system is composed of arranged elements, which are engaged in interrelated activities. While the elements condition the structure, the interrelatedness (relationships) determines the process (Sirgy, 1984). According to the household, interacting elements can be people or non-human components, such as a car, or rooms of the living place. For example, household members might interact during shopping, as they communicate their needs, or share tasks such as loading the car, driving to the supermarket, or even help in the storage of goods. If a household usually places a shopping list in the kitchen to let other members note their needs, the interaction between the elements (household members, kitchen, and shopping list) patterns the structure, while the involved activities determine the process, which here is the preparation of a list. In general, the system's process is a sequence of activities the system performs (Granzin, 1990). To get a first insight into the household's consumption process, Granzin and Bahn (1989) classify the process into ten major decision areas. Each area includes decisions and activities that condition the efficiency and effectiveness of system performance. Figure 2-1 illustrates the descriptive process model.

The process model consists of ten areas: Setting, Pre-trip stock assessment, Trip planning, Outbound travel, In-store selection, Inbound travel, Post-trip stock management, Disposal, and Post-trip communication. Each area involves decisions and activities conducted in order to fulfill the system task. The process model cannot be interpreted as a schedule scheme that explains the sequence of activities which constitute the consumption process. It more accurately outlines interrelations of decisions and activities in a sequence. For example, the setting area comprises of decisions about the living place. If a consumer decides to move in a house in a rural area, pre-trip information gathering might be conducted very differently compared to when living in cities, where stores are a less than a kilometer away. Depending on the gathered information, the consumer collects quantity and cost information to assess the inventory. Based on the household inventory levels, the consumer considers needs and plans a shopping trip. According to this interdependence, the later areas constitute the consumption process, ending with post-trip communication. The decision areas of the process model determine the consumption process. In order to assess the logistical relevance of this process,

Granzin and Bahn (1989) compare industrial logistics with CL. They consider five main logistic functions proposed by Boweresox (1978): Location, Inventory, Transportation, Handling & Storage, and Communication. Each of these functions represent a logistics subsystem and constitute the field of business logistics.

A PROCESS MODEL OF CONSUMER LOGISTICS DECISIONS

Figure 2-1

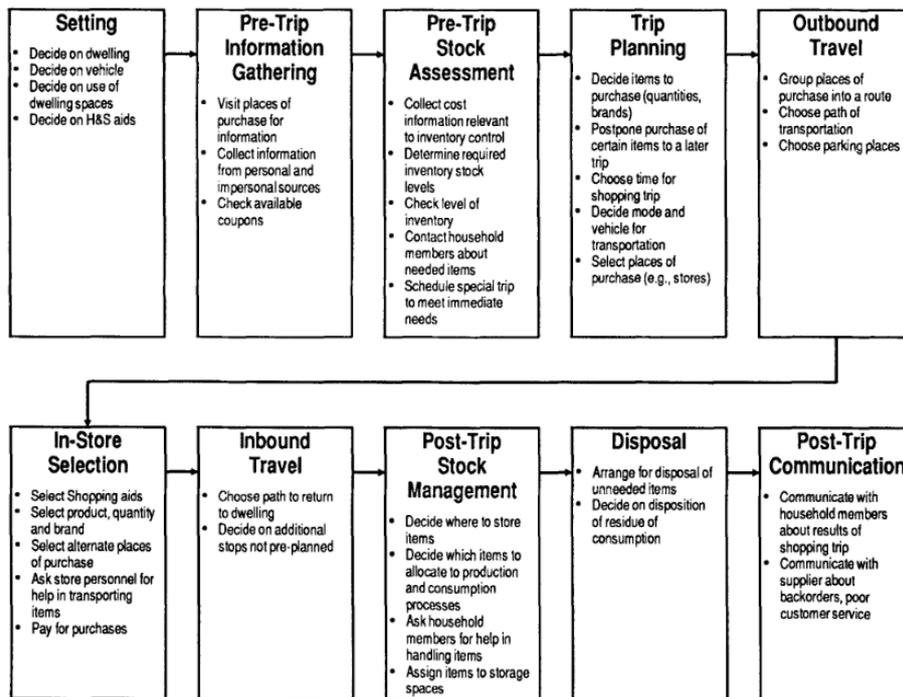


Figure 2-1: A Process Model of Consumer Logistics Decisions (Granzin and Bahn, 1989, p. 93)

Location (1) concerns all activities in regard to decisions on space and time. Probably the most crucial decision in reference to the dwelling, in terms of a house instead of an apartment, has different consequences on the following decisions/activities within the system's process. A house might allocate more space than an apartment, which enables the consumer to store and therefore buy more products. Activities within the subsystem "location" interrelate with the subsystems of transportation (decision on place to live), inventory (decision on volume of goods to acquire), handling & storage (deciding on where to store items) and communication (decision on how (and where) to receive information) (Granzin and Bahn, 1989).

Activities within the subsystem **inventory (2)** are about the management of goods through time. This includes the decisions on when and how much to order. (Granzin and Bahn (1989) describe the corresponding activities/decisions the consumer performs in a rational manner. "[...], the inventory function represents the trade-off between ordering, carrying, and stockout

costs in the process of deciding on sources of supply, [...]. This trade-off occurs when a homemaker evaluates the needs of her family while considering her constraints on money and storage capacity” (Granzin and Bahn, 1989, p.95). The process from an occurring need, to the realization of the shopping trip and the final disposal, is an iterative decision process. The consumer makes a lot of decisions due to economic and personal factors as shown in Figure 2-2.

INVENTORY BASED DECISION-TREE

Figure 2-2

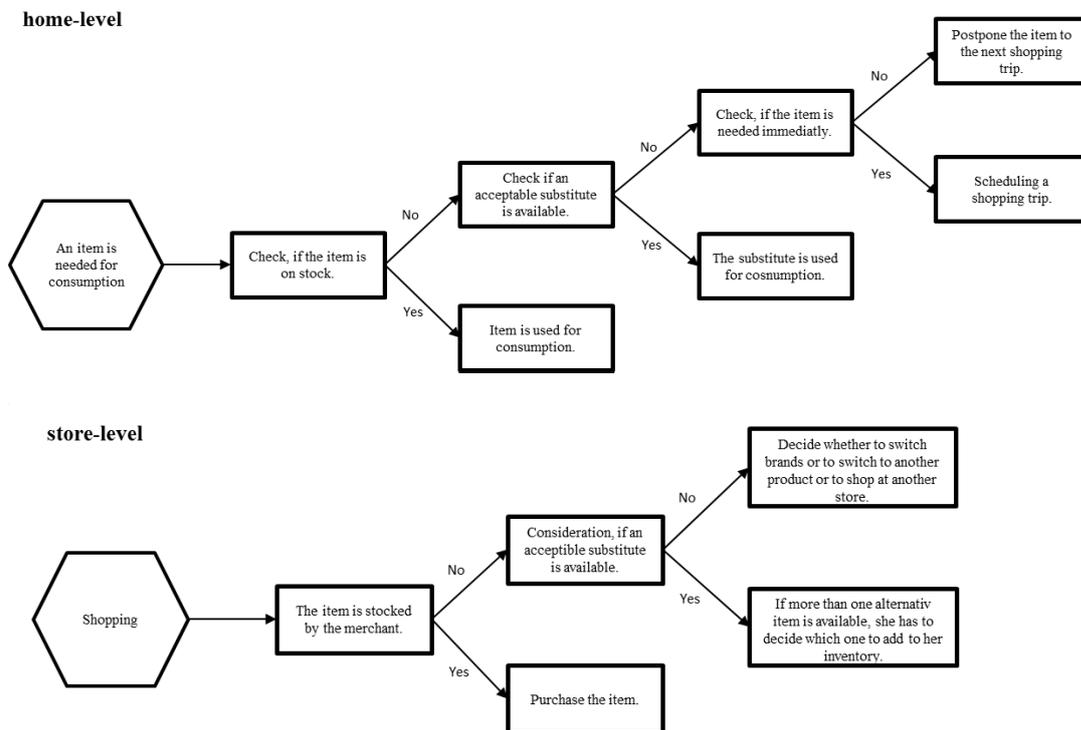


Figure 2-2: Inventory based Decision-Tree (adapted from Granzin and Bahn 1989)

The **transportation (3)** subsystem revolves around the movement through space and reflects those activities outside the dwelling, which effect the consumer’s movement and her goods. Granzin and Bahn (1989) stress that the choice of transportation mode makes constraints on the consumer logistics task. On the one hand, the consumer’s possibilities to ride (public transportation, private car, bicycle, etc.) dictate the way the shopping trip is realized and what goods are purchased, on the other hand, the good’s properties (length, width, weight) and the purpose of the shopping trip can affect the decision as well. Furthermore a trade-off also exists. The consumer has to find a balance between the service benefits and the costs of providing those benefits. In the case of buying drinks together with frozen goods and other groceries, the consumer might prefer her private car, instead of using tram to manage the shopping trip. While the usage of a private car offers the benefits of convenience, speed, large

storage, etc. riding by tram burdens the consumer with carrying a lot of weight, slow speed, and a limited ability to carry things. If the consumer has no own car, she would prefer public transportation means, or her bicycle, but might consider buying only necessary needed goods (Granzin and Bahn, 1989).

Handling and Storage (4) (H&S) is characterized by those activities which are about “[...] small-scale movements of goods and their placement in physical space” (Granzin and Bahn, 1989, p. 96). H&S activities occur at several stages within the purchasing process: within the store, between the store and the vehicle, and within the dwelling. Granzin and Bahn (1989) differentiate the H&S activities between the strategic level and the operational level. While H&S on a strategic level considers decisions on the dwelling layout in terms of shelves, refrigerator, countertop, etc. in regard to the H&S performance, H&S on the operational level is about decisions on the creation of assortments. Assortments are created in order to fulfill consumption needs and to reduce logistical effort during the shopping trip. Granzin and Bahn (1989) suggest six functional areas to characterize H&S activity: receiving, make-bulk, break-bulk, placement in storage, retrieval from storage, and shipping (Granzin and Bahn 1989).

The **communication (5)** task represents the activities relating to information flow, which supports the consumer in making the right decisions. Communication activities are conducted simultaneously throughout the whole CL process. Beginning with the consideration as to what articles are needed, and who of the household’s members is going to purchase them, communication is in line with planning activity. On the operational level, the consumer continually selects and evaluates alternatives in order to realize her shopping desires. Outcomes then provide information as a feedback to the consumer, which are used in further decisions and as a reflection of the shopping trip. Granzin and Bahn (1989) argue that the household becomes more effective if communication and order processing is done more formally. Thus, the household’s decision maker sets explicit consumption objectives and acts more rationally (Granzin and Bahn 1989).

The comparison of industrial logistics subsystems to the household’s consumption process has supported the assumption that consumers engage in logistics and act in a logistics system household. Granzin (1990) further considered an input-throughput-output perspective to examine the household CL system in greater detail. Because consumption is an operation the household performs over time, the CL system has to keep the process going by utilizing resources to feed the system with inputs. Granzin (1990) characterizes the resources as aids for the consumption process, and differentiates between human and non-human resources. “Possible human resources include a vast array of capacities and abilities possessed by household members: time, energy, money, health, knowledge, and interpersonal skills” (Granzin, 1990, p. 244). He summarizes the human resources as human capital. Material resources are supporting equipment and facilities such as a kitchen, automobile, telephone,

and the house. The inputs of the CL system are information or matter/energy. Information inputs are requests, requirements, and expectations from the system's environment and from the elements. For example, a television commercial can address a specific need of a household member that might be further recommended to others. Advertisements can offer price promoted products that might also influence the conducted CL activities. Matter/energy inputs are labor saving devices, such as food, clothing, and electricity. Inputs can either be short-term, which are consumed fast, or long-term, which support the consumer over weeks. So resources can also be former inputs, such as kitchen utensils that help and enable the consumer to cook special meals (Granzin 1990).

During the consumption process, the household converts an input into a throughput. For example, when we buy food in order to cook a meal, we separate or merge the ingredients for consumption purposes that represents the throughput. The output appears in the same form (information, and matter/energy) as the input. Granzin (1990) argues that the household's output could either be trash (food residues), resold, or repaired (electronic articles). The recommendation of a friend to purchase a special product can be an input to the consumer, the experience of the brought articles can also generate an information output as a further recommendation or compliance (Granzin 1990).

While the elements of the household system interact, the system itself can interact with the environment. This might be the case when CL activities are outsourced to a supplier. For example, the consumer can either decide to shop for clothes at a local store, or e.g. to order online, whereby the supplier delivers the clothes to the household's dwelling. Nevertheless, it is presumed that households balance these decisions to an optimal degree (Granzin 1990). According to the input-throughput-output perspective, Granzin (1990) applied an empirical investigation of western households. 18 (aggregated to 12) CL functions could be identified, which further explain the nature of CL in more detail. Table 2-1 illustrates the identified CL functions that are classified (in brackets) to the logistic subsystems of Bowersox (1978). The findings from the investigation were set in relation in order to establish a scheme that describes the sequence of the CL functions. However, a general sequence could only be narrowed analogously to Figure 2-1, for the reason that households are too individual in regard to their structures. The same holds for the setting and accomplishment of the household's goals.

Each household, or CL system constitutes a specific pattern, that is mainly dominated by two components: the managerial modality, and personnel modality. While the managerial component includes decisions on the operation, the personnel component deals with the household's values and establishment of needs and relates to the behavior of consumers. So it

is the personnel modality, which evaluates the accomplishment of goals and therefore determines how intensive effectiveness and efficiency is realized.

IDENTIFIED CONSUMER LOGISTIC FUNCTIONS
Table 2-1

In-home stock management (inventory): *Includes activities/decisions on: where items to store at home, when to buy a product, the discard of items, the removal of items from stock, the management of the household's supply, determination of the needs, control of available items at home, and the formalization of a shopping list.*

Selection of trip origin (location): *Includes activities/decision on: from where to start the shopping trip.*

Trip management (transportation): *Includes activities/decisions on: which vehicle, means of transport to use, which route to follow, when to shop (time), persons who has to shop with whom.*

Trip rescheduling (transportation): *Includes activities/decisions on: how to substitute items if the shopping trip is not possible, postponing or canceling the shopping trip.*

Nature of travel (transportation): *Includes activities/decisions on: taking a long trip or a short trip, how much time should be spent, how many and which stores are visited, involvement of carrying purchased items.*

Store selection and usage (location): *Includes activities/decisions on: the type of store, how many stores to visit in regard to time limit, comparison between stores in regard to prices and products.*

In-store information gathering (communication): *Includes activities/decision on: what products to buy due to information from store personnel*

In-store substitution (inventory): *Includes activities/decision on: substitution of the item by another article, product, or brand, in regard to Out-of-Stock (OOS), or by switching the store.*

Transport-related materials handling (handling and storage): *Includes activities/decisions on: how to manage conveyance of items within the store, home, and from the mode of transportation.*

In-home customer service communication (communication): *Includes activities/decisions on: arrangement of joint needs, discussions about feedback and satisfaction of the shopping trip.*

External food supply (location): *Includes activities/decisions on: the supply of food, eating in a restaurant, or food delivery.*

Household supporting operations (handling and storage): *Includes activities/decisions on: Maintenance of equipment (vehicle), disposing of garbage, supporting the household.*

Table 2-1: Identified Consumer Logistic Functions (adapted from Granzin, 1990, pp. 248-251)

Nevertheless, logistics encompasses the optimal accomplishment of objectives (performance) with efficiency and effectiveness. A CL system might be efficient, if the value of outputs favors the value of invested resources. Effectiveness, on the other hand, conditions a fast and direct accomplishment in relation to time (Granzin 1990). Because, the personal component determines performance, typical logistic measures for efficiency and effectiveness might only be applied for CL to a certain degree. Granzin (1990) therefore suggests satisfaction as a measure to evaluate the performance of the CL task. Because it is only the consumer who can evaluate how satisfied she is regarding to the realization of her consumption goals.

As mentioned before, the household as a consumer logistics system is characterized, on the one hand by logistical activities and decisions, which constitute the process, and on the other hand by the interrelated objects which constitute the structure. Because the household has a management task in order to consume, the household establishes goals. These goals condition the performance of the system, whereby the household manager chooses and selects activities due to rational and personal criteria. There are several similarities between the CL system and industrial logistic system. According to an institutional differentiation of logistic systems, the household logistic system might be part of micro-logistics, as it bridges POS with POC. This linkage represents inter-operational logistics of an organization, as consumption might be the primary system task, whereas logistics is secondary (Pfohl 2010).

2.3 Consumption Related Behavior

The descriptive model of CL comprises of the household's activities and decisions in space and time that supports the procurement of goods, and therefore the accomplishment of the goal of consumption. In brief, consumers plan and conduct a shopping trip in order to consume. Because households are individual, they have individual needs and wants, and therefore shop differently. Shopping is on the one hand the operation of CL, but on the other hand, consumption related behavior. Consumers seek out stores due to their needs, the offered marketing mix by the retailer, and the shopping effort the consumer has to undertake (Ingene 1994). So consumer behavior becomes a central aspect of CL.

Research on consumer behavior has the task of identifying the central factors which determine the specific behavior of consumers. This means trying to explain who is buying, what, why, how, how much, when, and where (Meffert, 1971, p. 392). An adaptation of this perspective on the shopping process will give insights into the properties that constitute specific consumer behavior. Because this study focuses on the CL process in regard to FMCGs and specifically to groceries, this chapter classifies aspects of consumer behavior in regard to grocery shopping.

The kind of items being purchased classifies the type of purchase decision. Groceries are mainly convenience goods and food articles, such as fruits, vegetables, chocolate, and drinks. Decisions on these kinds of items underlie a low degree of collectivity and normally poor planning. Furthermore, some purchasing characteristics are low financial commitment, low need of information, low degree of novelty, low involvement of members, and less important meaning in the consumption system. But grocery items are also characterized by a high degree of experience and high frequency of purchases (Ruhfus, 1976).

Starting with the question as to who decides on which items are to be purchased, the literature on shopping behavior differentiates between four possible types of purchase decisions (Kroeber-Riehl, 2009). These can be households, or organization (see e.g. Johnston and

Lewin, 1996), which either decides on their own, or as a collective. In regard to grocery shopping, it is the consumer, who either decides on her own, or in a collective (household).

Households are social constructs that represent an institution. Because households are more or less a group of individuals, the institution sets rules and norms, which regulate the household's behavior. According to this perspective, every household member has a specific role in accordance to the household's expectations (Sirgy 1984). So the distribution of roles condition which household member is responsible for household management, and respectively, for the procurement of groceries. So every household has at least one "manager". Nevertheless, household members interact as they communicate their needs and coordinate activities to satisfy the household's needs. So the question arises as to which degree does the household manager decide on her own?

Although consumers consider their needs before, or due to a shopping trip, it has to be mentioned that many purchase decisions are even made during the shopping trip. Following this assumption, a shopping trip might involve collectively (home-level) and individually (store-level) made purchase decisions (Meffert, Burmann, and Kirchgeorg, 2012). However, as stated before, FMCGs and especially groceries and articles of food require a low degree of collective planning and the bounded risk to make a false decision is quite low. So purchase decisions on FMCGs are generally individual, as household members are willing to forward responsibility to one manager. In order to explain specific consumer behavior, it is necessary to consider central determination factors. The interplay between interpersonal factors and intrapersonal factors results in specific consumer behavior, as shown in Figure 2-3.

CENTRAL DETERMINATION FACTORS OF CONSUMER BEHAVIOR

Figure 2-3

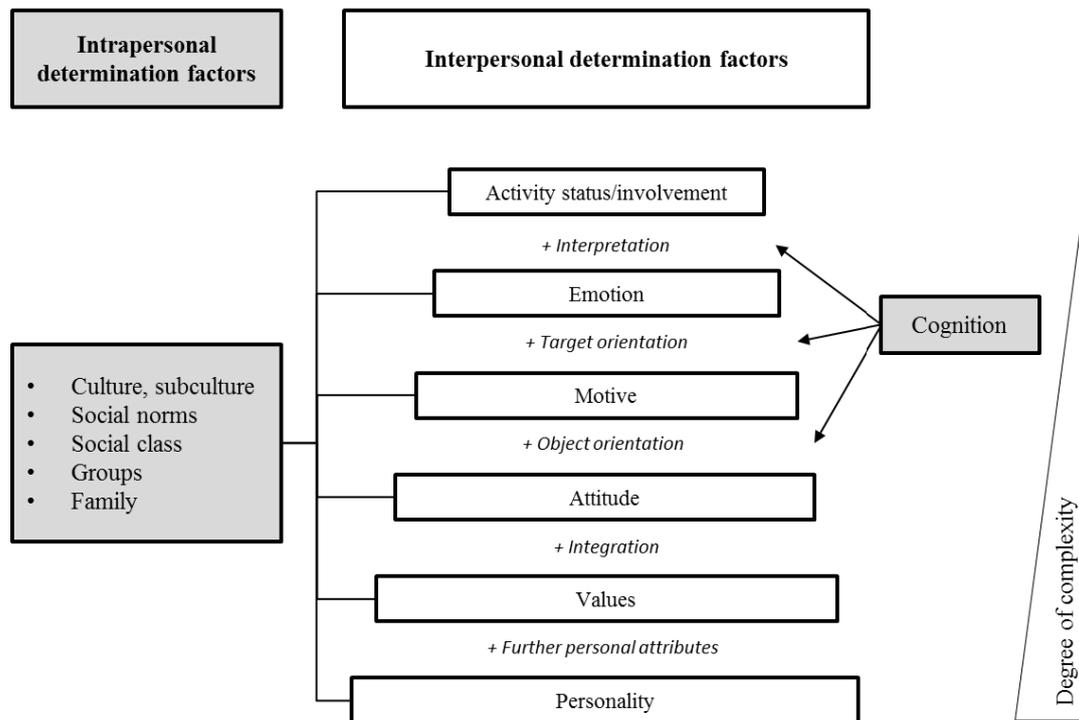


Figure 2-3: Central Determination Factors of Consumer Behavior (Meffert, Burmann, and Kirchgeorg, 2012, p. 108)

Intrapersonal factors are psychological constructs, which consist of activate and cognitive processes. The status of being activate, conditions the individual to be performance-capable, while cognition is about information processing and the guidance of the individual (Forscht and Swoboda 2011). Intrapersonal factors are arranged hierarchically so that personality includes all other constructs: activate status/involvement, emotion, motive, attitude, and values. Interpersonal factors are external, such as: culture, subculture, social norms, social class, groups, and family (Meffert, Burmann, and Kirchgeorg, 2012).

Figure 2-3 displays the interrelationship of these factors. By considering the central determination factors, marketing literature has identified four different kinds of purchasing decisions: extensive, limited, habitual, and impulsive purchasing behavior (Kroeber-Riel, 2009). Extensive purchasing behavior indicates a high cognitive workload as the consumer is precise in her purchasing decision towards the end of her decision process (buying a house). If the consumer has already had experience in purchasing a product or service, without preferring a specific alternative, the decision then involves proven criteria and is limited in information gathering. However, repetitive purchasing might be habitual purchasing behavior,

if the consumer's shopping underlies a pattern, and planned purchase decisions are also then realized. This might often be the case in terms of daily grocery products. Impulse purchasing behavior classifies consumers who purchase an unplanned item due to a stimulus which transfers an emotional load to the consumer. The reaction is translated into purchasing. The characteristics of grocery shopping indicate that habitual and impulsive purchasing behavior happens in the supermarket (Foscht and Swoboda, 2011).

2.4 Logistical Shopping Patterns

As previously mentioned, grocery goods provide a special shopping behavior, which can be classified to a certain degree (Foscht and Swoboda, 2011; Sorensen, 2009). While consumers shop for groceries in a habitual manner, the assumption arises if consumer logistics are performed habitually as well.

Teller and Kotzab (2004) investigated the extent to which consumers undertake logistics activities. They examined how consumers perceive CL, and how relevant CL is to their choice of distribution channel. Based on the descriptive model of CL from Granzin and Bahn (1989), CL is quantified in accordance to the temporal distance of planning, transport, and picking activities, which the consumer performs during the shopping process. As a measure for the consumer's perceived relevance of CL, consumers were asked to state their willingness to pay for third party delivery. The relationship between undertaken logistical effort and monetary stated figures are used as an indicator for the consumer's perceived importance of CL. Teller and Kotzab (2004) could show that CL variables (planning, transport, and picking) hardly explain changes in the consumer's willingness to pay for CL. Moreover, consumers do not perceive CL as important. The findings from Teller and Kotzab (2004) support the assumption from Barth et al. (2007): that it is too time intensive and difficult, as consumers would consider it necessary to calculate and plan their logistical performance, just as an organization would do it.

As households differ in regard to their structure (members, age, dwelling, etc.) and their habits regarding shopping, the assumption arises that participation in CL activities differ as well. Granzin, Painter, and Valentin (1997) investigated a household's CL participation in relation to their demographics and shopping habits. CL participation was represented by eight CL tasks, while shopping behavior (17 categories) and demographics (12 categories) were represented by several categories. The linkage of shopping behavior, demographics, and CL participation identified six segments that represent CL patterns of shoppers (480 residents of a large western metropolitan area within the USA). While all CL tasks contribute to all CL patterns, the categories of demographics and consumer behavior only contributed to some extent. Nevertheless, the description of the six CL patterns, which were labeled, "Household Captain, Minimizers, Extended Shoppers, Finally Supporters, Flexible Shoppers, and Helpers", led to six different household patterns. For example, "Household Captain" were

multi-member households, living in a house, and primarily engaged in storage management, inventory acquisition, and logistics coordination. These households were not convenience orientated and were represented by a female homemaker with high expenditures on groceries. In contrast, “Minimizers” used convenience as a salient criterion for store selection, and were in most cases single households. These households had less income and resided in an apartment. The CL patterns illustrate differences and therefore support the assumption that CL might correlate to categories of household demographics and shopping habits (Granzin, Painter, and Valentin 1997).

Also Teller, Kotzab, and Grant (2006) investigated the consumer’s CL participation due to different stationary store types. They assumed that consumers engage in CL with different intensity, as stationary stores cater to different clienteles. Besides marketing instruments, the store type’s catchment area determines the logistical differentiating component of discounters, supermarkets and hypermarkets. The consumer’ CL participation is differentiated between management and operation. The results show that planning intensity seem to be quite homogenous, while the dimensions of operation (Number of procurement actions, transport effort, and commissioning effort) significantly differed between store types. Kotzab, Teller, and Grant (2006) could further show that consumers evaluate their undertaken CL performance as efficient and positive. In conclusion to that, consumers’ willingness to pay for the outsourcing of CL activities to e.g. online food retailers seem to be low.

CL patterns occur according to different factors. CL seems to be performed habitually in parallel to shopping behavior: on the one hand, the demographics of the household and the shopping habit categorize a CL pattern (Teller and Kotzab, 2004; Granzin, Painter, and Valentine 1997). On the other hand, store types condition the intensity of CL due to their clientele (Teller, Kotzab, and Grant, 2006).

3 Methodology

3.1 General Introduction

In order to gain new insights into how consumers perform their shopping tasks from a logistics perspective, this chapter provides the development of the “Grounded Approach” methodology and the research design. Chapter 3.2 starts with a brief explanation of Grounded Theory (GT). An ethnographic perspective and the method of participant observation are then brought into the context of GT. Subsequently, the methodology of the “Grounded Approach” is defined from theory that establishes the basis for the research design. Chapter 3.3 explains the research design, beginning with the sample and the general conduction of the “Grounded Approach” method. Additionally, due to their application in the study, the observations and interviews of participants are described in more detail. The chapter ends by describing the content analysis that offers the findings of this study.

3.2 From Grounded Theory to “Grounded Approach”

3.2.1 A brief Background on Grounded Theory

Grounded theory is a qualitative research method, developed by Glaser and Strauss (1967). Glaser (1992, p.16) defines GT as “a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate inductive theory about a substantive area.” So GT is more a guideline, rather than an explicit method. The origin of grounded theory is founded in the research fields of sociology, nursing and health, and organizational studies. It has also become dominant in marketing and consumer research (Goulding, 2005). GT is mainly influenced by symbolic interactionism that has raised the preposition that theories can emerge from social environmental data (Robrecht, 1995). This means that an individual’s interaction, such as communication and behavior depends on their interpretation of reality (Blumer, 1969). Because the interaction is symbolic (words, language, meanings), Grounded Theory has to be conducted recursively and the gathering and analysis of data is iterative in order to gain saturated interpretations of a social phenomenon (Glaser and Strauss, 1967; Strauss and Corbin, 1990). Kaufmann and Denk (2011) refer to five tenets that differentiate GT from other inductive research methods:

1. Questions emerge from data and are not generated a priori from hypotheses
2. GT allows any kind of data collection that fits the study
3. The data collection process is guided by theoretical sampling
4. GT procedures include data coding
5. Data collection can be stopped when theoretical saturation is reached

The first tenet means that once a research field is identified, the researcher enters the field and treats existing literature and theories as part of the data. The second tenet allows the

researcher to employ different research methods such as interviews, participant observation, secondary data or statistics, as long as methods generate rich data (Charmaz, 2013). GT cannot be defined as a linear method and is applied very flexibly, so that the data first guides the researcher's next sampling (third tenet). The researcher is thereafter guided by their analysis and interpretation towards more specified research questions (Goulding, 2005). The analysis begins as soon as there is data. The researcher then fractures the data into segments and labels words, meanings, and particular phenomena into open categories. These categories may even possibly change during the research, are merged, or dropped due to new insights from the investigation (fourth tenet). Once categories reach saturation, they end up in a core category (CC) and data collection is stopped (fifth tenet) (Clarke, 2007; Kaufmann and Denk, 2011). All the mentioned tenets become apparent in Figure 3-1, that visualizes a representation of Grounded Theory.

A VISUAL REPRESENTATION OF GROUNDED THEORY

Figure 3-1

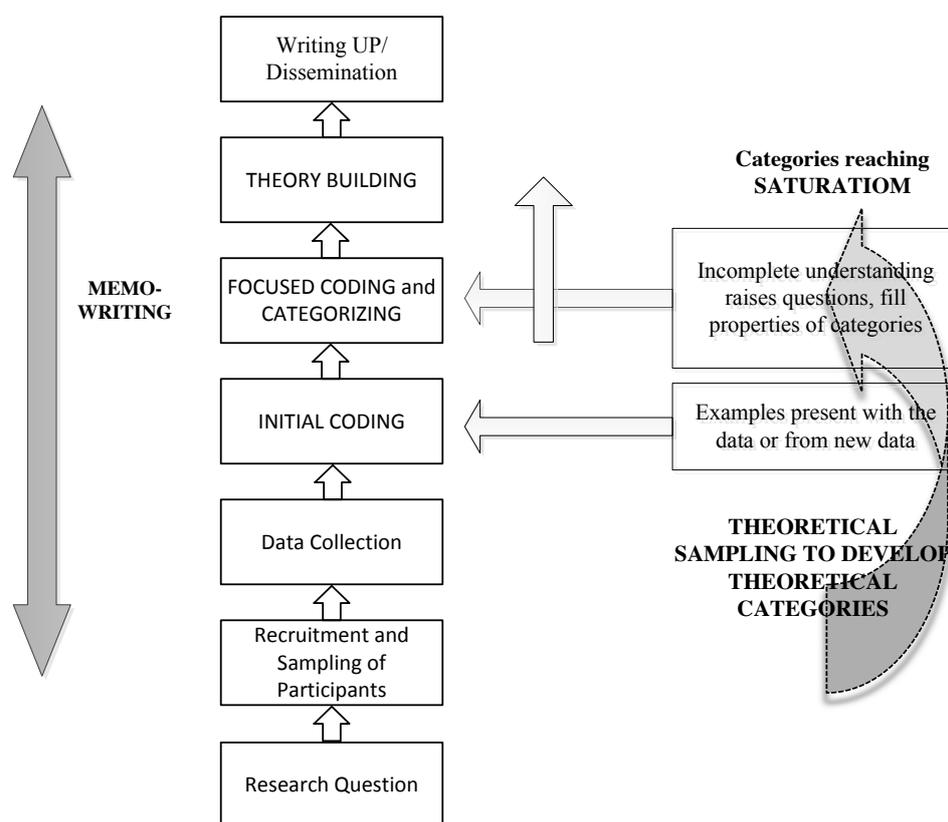


Figure 3-1: A visual Representation of Grounded Theory (Charmaz, 2013, p. 18)

Memo-writing plays a central role when conducting Grounded Theory. The researcher records their thoughts, conclusions and definitions of categories in memos. Furthermore, these memos

let the researcher be guided through the process of sampling, data collection and analyzing (Charmaz, 2013).

3.2.2 Ethnography and Participant Observation

Many GT studies use ethnographic methods in order to examine social phenomena. The object of ethnography is to gain a holistic picture of a group, including their behavior, cultural backgrounds, and context (Mathews and Kaltenbach, 2007). Atkinson and Hammersley (1994, p. 248) describe ethnography as a form of social research that features:

- “A strong emphasis on exploring the nature of particular social phenomena, rather than setting out to test hypotheses about them”
- “A tendency to work primarily with “unstructured” data, that is, data that has not been coded at the point of data collection in terms of a closed set of analytic categories”
- “Investigation of a small number of cases, even just one case, in detail”
- “Analysis of data that involves explicit interpretation of the meanings and functions of human actions, the product of which mainly takes the form of verbal description and explanations, with quantification and statistical analysis playing a subordinate role at most”

So ethnography has some commonalities with the intention of Grounded Theory. By combining GT with ethnographic methods, the phenomenon of consumption can be effectively addressed (Pettigrew, 2000). In most cases of ethnographic research, the researcher enters the field by being a participant in the field. This method is called participant observation. The researcher becomes part of the group and interacts with the members. The researcher’s role is therefore crucial to the research results (Mathews and Kaltenbach, 2007). His personality and acceptance by the group members condition the interaction with the researcher and the field. Bachmann (2009) points out that studied participants are usually skeptical towards the researcher, as they feel spied upon. While participants are sympathetic to the researcher, this problem might be avoided. So the researcher has to behave sensitively.

3.2.3 Development of the Instrument “Grounded Approach”

Based on the descriptive model of “Consumer Logistics” by Granzin and Bahn (1989), who determined that consumers engage in logistical activities in order to fulfill their needs of consumption, this study tries to gain new insights that might explain this phenomenon. Preliminary findings from literature (Granzin and Bahn, 1989; Granzin, 1990; Granzin, Painter, and Valentin, 1997; Teller and Kotzab, 2004; Teller, Kotzab, and Grant, 2006) are the starting point in conducting a “Grounded Approach” project that hopefully leads to new hypothesis and further insights in this still existing gap in the literature. The object of this research is the household’s engagement in planning, processing, and management of logistics

activities and decisions within the consumption process of groceries. Because decisions on consumption purposes include social interactions between individuals, shopping can be treated as a social phenomenon. By adding knowledge of consumer behavior to this social phenomenon, we find that the household's procurement of grocery goods is achieved in a habitual manner, so that the shopper's purchasing decisions are mostly made habitually or impulsively. Furthermore, shoppers perceive logistics activities and decisions only to a certain degree. This study precedes inductively, independent of any existing theory, whereby current research investigations on Consumer Logistics are treated as part of the data.

A "Grounded Approach" is chosen specifically, due to the reason that, there are no scientifically confirmed theories that already explain the aforementioned social phenomenon. Neither is there any empirical data with a saturated model of Consumer Logistics, nor is it clear which data would bring about saturation. While the principles of Grounded Theory are kept, the ethnographic method "Participant Observation" will be conducted in four different types of households during the process of shopping for groceries. As GT provides a flexible guideline, the shoppers are also interviewed before and after the shopping tour, and questioned in addition to observations. Materials include interview transcription, observation protocols and further data e.g. photos, audio records. Due to the scale and scope of this study, the sample is limited to four households. Therefore, it cannot be expected that core categories reach saturation. Moreover, the goal of this study is to gain hypothesis ideas, and explanations that might hold for households in general, than establish empirical validated theory for the explanation of Consumer Logistics.

3.3 Research Design

3.3.1 Sample and Procedure of the Research

The study is conducted in Germany, in the city of Bremen and its surrounding area. Due to the scope of this study, the sample includes four different types of households, as shown in Table 3-1. Each household differs in regards to the properties of the dwelling, location, the participant's demographics, as well as the monthly expenditure on groceries. The order to which the households are examined is subject to an agreement with the participants. The survey period is between July 28th and August 15th, 2014. The following sample is not representative for the basic population that includes all the households in Germany, and respectively for European households. However, it meets the requirements for examining a phenomenon from a new perspective, which might give new insights. The chosen households are "semi-unfamiliar" towards the researcher, as they are distant acquaintances or interceded persons. This secures a comfortable interaction between researcher and participant.

CHARACTERIZATION OF THE SAMPLE

Table 3-1

The sample includes four different types of households. Each differs in regard to location, dwelling, demographics, and income. The order to which households are examined depends on the agreement with the participants.

| | Household I | Household II | Household III | Household IV |
|-------------------------------------|---|---|---|---|
| Description: | Young couple, male at the age of 26 years, female at the age of 28 years, - not married, without children | 4 household members, parents (50-55 years) and grown up daughters at the age of 21 and 24 years | Single household, male at the age of 70 years | A family of three members, male at the age of 41 years, female at the age of 40 years and female child at the age five years, one dog, two available cars |
| Properties of dwelling: | 50m living space, two-room department on third floor, integrated kitchen, no lift inside the building | Ca. 200 m living space, house on a farm, kitchen in the first upper floor | Ca. 60 m living space, apartment on the fourth floor, kitchen in a separate room, no lift inside the building | Detached house, ca. 400 m living space, kitchen in a separate room |
| Monthly expenditures on groceries*: | 220 EUR | 550 EUR | No comment | 800 - 1,000 EUR |
| Dwelling place: | Horn-Lehe, Bremen | Grasberg, Niedersachsen | Horn-Lehe, Bremen | Leer-Logar, Niedersachsen |
| Survey time: | 2014-07-28 | 2014-07-31 | 2014-08-05 | 2014-08-15 |

* average of estimated expenditures on groceries per month

Table 3-1: Characterization of the Sample

Each household's representative was informed about the study's objective and data privacy before the investigation started. The researcher would accompany each household during their shopping tasks. Because, planning and management of groceries are also focused upon, the research phase is separated into three sections: pre-trip section, operation section, and post-trip section. While the focus of participant observation is mainly on the household's operation, interviewing becomes important before and after the shopping trip. The participants are visited in their dwellings an hour before the shopping trip begins. The researcher interviews, carries on a conversation, and observes the situation in the pre-trip section. Once the participant is ready to go shopping, the researcher accompanies the participant during her operation. Simultaneously, the researcher observes the situation, makes notes and photographs conspicuous things⁵. When the shopping trip ends, the researcher accompanies the participant back to their dwelling. Again, the participant is interviewed and a conversation is conducted on the shopping trip. Thereafter, the inquiry is finished.

⁵ Photography are only made for memory task in order to ease coding.

3.3.2 Observation of Participants

The observation focuses on the discovery of what people do and how they do it. The intention is to understand and decode human behavior, which is perceived by the researcher in the moment when it occurs (Mangold and Kunert, 2007). Pauli, Rau, and Bierbauer (2003) distinguish between three levels of behavior: cognitive-verbal, motoric-behavioral, and physiologic-humoral. While the first two can be observed (indirectly/directly), physiologic-humoral includes activities of brain, attacks of sweating, and beating of the heart, that can only be detected with instrument-based practices. In this study, participant observation is more than just observation. The researcher is invested in interacting with the shopper, which includes the task 'of maintaining a conversation in addition to observation. So the first two levels of behavior are examined, as observation focuses on the motoric-behavioral level (movements, countenance, and body language). The cognitive-verbal level (thinking, valuations, and language) is examined by conversations.

The observation method of this study can be classified to a certain form according to Mangold and Kunert (2007). The household knows about the investigation, so research activities are not covert. There is no fixed plan that constitutes which situation is examined and at which time. The focus lies on everyday life situations that occur routinely. Additionally, the pre-formulated objective of this study is quite open, so observations are unstructured. As GT has to be very flexible, observations also have to allow for sudden changes. An important issue to participant observation is the perception of the researcher (Bachmann, 2009). Active participation in the shopping task compels the researcher to interact. The interaction between the researcher and the participant determines a social construct in which the researcher plays a special role. Depending on how the participant perceives the researcher (as a friend or stranger), the researcher may gain more or less insights from the observation. So the researcher has to be very sensitive. In order provide sensitivity during the investigation, participants are informed about the research objective, while notes and questions on the research topic are also openly available. The relationship between researcher and participant is already built on a certain level of trust, but due to the semi-unfamiliar situation, sensitivity is supported too. In this sense, the researcher appears in the field more as a guest, instead of being an outsider.

Participant observation starts by entering the dwelling of the household and ends when the shopping tour is finished by storing the groceries at the shopper's home. However, most observations are done outside the dwelling on the shopping trip. Findings are then noted in protocols including the time when they occurred. Simultaneously, interesting thoughts are noted separately in memos, so the investigation can be conducted at a later stage without interruptions. When the examination is finished, the researcher reflects upon the findings and adds further thoughts.

3.3.3 Interviewing Participants

On the one hand, questioning of participants is part of the participant observation method that is conducted by simple conversations in order to learn about activities and decisions within the field. On the other hand, participants are also interviewed before and after the shopping trip. Therefore, each household is interviewed two times.

These interviews cannot be classified to a certain type, but have some specialties that will now be explained. While Charmez (2005) advises to conduct intensive interviews, the scope of this study is less comprehensive, as the focus is on the household's engagement in logistics activities, instead of gaining a cultural understanding of behavior. Therefore, the interviewing of participants is kept simple with minimal preparation. Indeed, the interviewer tries to keep the participant talking freely by asking questions that might lead to narratives. The starting question is asked in such a way that the interviewee starts to talk about a special context. This part of the interview is called "opening". When the interviewee has no more information to add, the researcher begins to enquire for more information (second part) in order to gain more narratives. The third part of the interview is the "balancing", where the researcher tries to gather argumentations and conclusions. Both interviews, before and after shopping, are conducted in the same way, only the focus differs. The interviews are conducted in the dwelling of the household. Each interview is recorded by a smart phone, whereas the conversations during the shopping trip are kept in accordance to the observation protocol.

3.3.4 Analysis of the Content

The qualitative analysis can be comprehended from the blueprint of the Grounded Approach (see Figure 3-2). The research procedure consists of three stages, which are systematically passed. The first stage refers to the households on an individual level (H I-H IV), and starts with gathering and preparation of data. As previously mentioned, this study applies participant observations including conversations, and a type of narrative interview as a foundation to provide qualitative material. The "raw" material is then transformed into transcripts⁶ according to the rules of easy transcription (Dresing and Pehl, 2011). Conversations and observations are protocolled. As Srnka and Koeszegi (2007) stated, language differences can arise due to problems in the transcription. In order to secure validated data, the transcripts are kept in German, as the participants are German as well, whilst at a later stage are translated into English⁷. Written material therefore includes three types of documents: Pre-trip Interview Transcript, Post-trip Interview Transcript and Participant Observation Protocol (see Appendix). The content analysis begins with unitization

⁶ Transcription: Transcripts are made with the transcription software "F4".

⁷ Translation: Interview transcripts are kept in German, while observation protocols are in English.

and initial coding. Units can include sentences, statements, associations or single words that might be the smallest units (Tangpong, 2011). Generally, the way unitization is conducted depends on the data and the research objective (Srnska and Koeszegi 2007). Initial coding interprets “[...] what is happening and makes relationships between implicit processes and structure visible” (Charmaz, 2013, p. 132). During studying and comparing initial codes, the researcher gains new insights that direct his examination towards categories they have identified⁸. This process is called “focused coding” and lets categories become saturated by subsuming and correcting codes (Categorization), and ends in defined category schemes that bundle categories in a theoretical and meaningful ways (Charmez 2013).

Content analysis is then continued in the second stage of the Grounded Approach. While the first stage considered the households individually, the second stage comprises a common perspective. The comparison of the four households is then conducted by identifying commonalities and differences, which might result in factors that describe possible variables. Insights from the second stage offer the basis for theoretical sampling whereby specific patterns of the social phenomenon are manifested into a theory.

A BLUEPRINT OF THE GROUNDED APPROACH

Figure 3-2

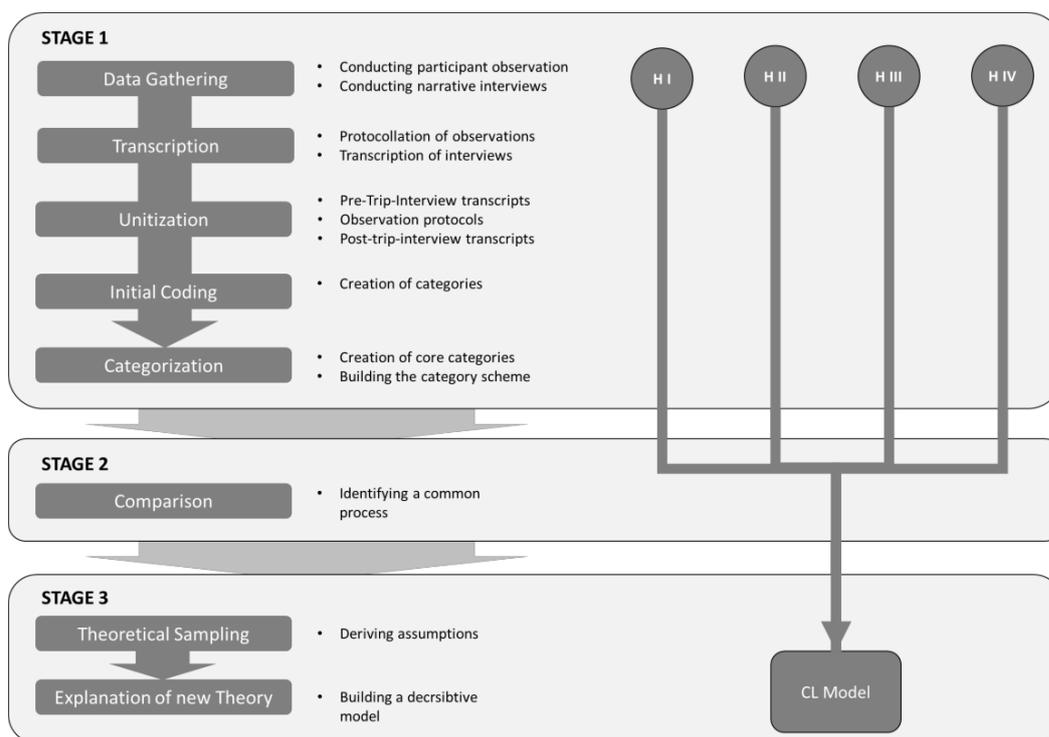


Figure 3-2: A Blueprint of the Grounded Approach

⁸ Coding and categorization is made with the software “F4 Analyse”

4 Data Gathering and Analysis

4.1 General Introduction

This chapter explains how the previously mentioned methodology was utilized in four different types of households and how information was gathered and analyzed in order to build core categories. Each household was investigated independently from the others, so that each household offered their own results 'in accordance to their specific processes and structure. Nevertheless, the procedure of each investigation was kept the same. Chapter 4.2 presents the general conduct of each household's investigation and defines the structure of the individual investigations that is presented in later sections. Chapter 4.2 further explains how interviews were prepared and observations were managed, in order to make the investigations more focused. Chapters 4.3 to 4.6 describe the individual investigations of the households in detail. These sections start with an overview of the household's properties that specify its type and structure. Subsequently, there follow a review of the individual investigations and a presentation of discernable aspects. Each household-chapter ends with an explanation of identified core categories which characterize each household's shopping trip. Chapter 4.7 compares the findings of the individual investigations. By comparing the different identified category schemes, common activities and decisions (sub-categories) are merged. Each area reflects a dimension to which the households are compared afterwards.

4.2 The Structure of the Investigation

The households were visited one hour before their shopping trip started. In the beginning of each investigation, the participants were informed about the research objective, conduct, and data privacy. An initial conversation made the participants more comfortable, whereby some information of the household would already be collected. When entering the research environment, the primary question is "what to look at?" Charmaz's (2013) recommendations on Grounded Theory is to first gain an overall picture. In this regard, it is useful to answer the question, "what is happening in the field?", and to examine the processes of the social phenomenon and the actors involved. At this point, the only data that could give insights, were the literature on Consumer Logistics. Granzin and Bahn (1989) describe Consumer Logistics as logistical activities and decisions that are made in a system to fulfill consumption needs: their investigation focused on a process that includes the planning, management, and operation of grocery procurement, rather than on the structure that is constituted by the process. The interviews before and after shopping were therefore prepared to a certain degree. As mentioned in Chapter 3, interviewing has to gain narratives from the housekeepers that might guide the researcher's examination. The starting question is therefore important and is formulated very openly with the focus on the shopping tour that will be made afterwards. The more information the participant offers on her operation "shopping", the more ideas the

researcher has to guide the examination. The starting question in all pre-trip interviews was the following:

- How do you intend to plan today's shopping trip?

The researcher has then focused more on the planning and preparation activities of the household. When saturation was reached the researcher asked:

- Where and how will today's shopping take place?

Further questions depended on the situational context. The post-trip interview focused on the evaluation of the shopping trip. As logistics is intended to optimize the accomplishment of a goal in terms of effectiveness and efficiency, the participant was asked the following question:

- How satisfied were you with the shopping trip?

Observations mainly focused on the shopping trip, but were made during the whole investigation. When entering the dwelling of the household, observations included identifying discernable elements that might influence the shopping process. When the shopping trip started, observations were protocolled and the participant permanently had the possibility to look at the researcher's notes. When the shopping trip was finished and all products were stored in the household's dwelling, the post-trip interview was conducted and the investigation ended.

Afterwards, the gathered information was transcribed into written text and initial codes were created. These codes included single sentences, parts of sentences and memos that described specific situations. Table 4-1 illustrates an example of how coding was undertaken. Starting with the observation protocol, the content was primarily coded in a way to clarify what was happening to gain first insights into the shopping process.

By examining the interview transcripts, further context was added. The initial codes were reviewed and explanations and statements of the interview were brought into the context of the shopping process. As coding is an iterative and recursive process, the context was reviewed several times, whereby similarities of codes were identified. Codes were then merged and separated from the insights the researcher gained from the data. In the next step, the categories were arranged in accordance to the context they described. By reviewing the material again and again, patterns and abnormalities were identified that guided the researcher to develop a category scheme. In this phase, coding became more focused and the objective was to find core categories that bundled the sub categories. In order to secure coding reliability, intercoder-consistency matrixes may have been helpful (Srnrka and Koeszgi, 2007). Nevertheless, due to the scale and scope of this study, these matrixes were not considered.

AN EXAMPLE OF INITIAL CODING

Table 4-1

| Initial Codes | Extract from the pre-trip interview of household III |
|-----------------------------|---|
| Shopping list as a reminder | (Appendix: Household III Observation, Paragraph 2) <i>U: „Ja, ich mach mir also einen Zettel, wenn es mehrere Sachen sind, alles kann ich mir ja nun auch nicht behalten und [mmh].</i> |
| Considering the needs | <i>Tja, dann überlege ich, wer kommt, kommen Gäste, oder kaufe ich nur für mich ein, und [mmh] dann schaue ich erstmal was brauche ich an Grundnahrungsmittel, wie Brot, Käse, Wurst, Butter, [...] ahja Milch und [mmh] die Grundnahrungsmittel kaufe ich meistens beim Lebensmitteldiscounter, frische Sachen gerne beim Bäcker oder Fleischer und [mmh], Getränke kaufe ich also auch beim Lebensmitteldiscounter und wenn ich mir dann so einen Plan gemacht habe was ich brauche, dann gehe ich los.</i> |
| Where to purchase | <i>Das sind also verschiedene Einkaufsstätten, die ich aufsuche, wie gesagt Lebensmitteldiscounter, Fachhandel und Getränkemarkt. Ja dann auch zum Wochenmarkt, da kaufe ich dann meine Eier.</i> |
| Where to purchase | <i>Zweimal in der Woche ist hier in der Nähe dann Wochenmarkt, da gehe ich zu meinem Eiermann bzw. Eierfrau, da weiß ich dann, dass ich gute Ware kriege und wenn ich mir dann den Plan gemacht habe, gehe ich los und arbeite das dann danach ab.“ #00:01:53-2#</i> |

Legend: Chosen store; Planned but not realized

Table 4-1: An Example of Initial Coding

4.3 Household I

4.3.1 Investigating Household I

The first Household is located in Bremen, Horn-Lehe. The household has two members, a woman at the age of 28 years and her male partner at the age of 26 years. They are not married and live in a 50 square meter apartment on the fourth floor. Both household members are students, and the woman additionally has a part-time job. The man owns a car that is also used by the woman. Both have bicycles and discounts on public transport due to their student status. In a radius of 2.5 km there are 11 possibilities to for shop groceries (convenience stores not included). Table 4-2 gives an overview of the household's properties and stores nearby. The household was visited 2:00 pm.

The male occupant was unavailable, so the female, here called “Marie”, was the person interviewed at her home and observed during her shopping trip. Thirty minutes before the shopping trip started, the pre-trip interview was conducted. The first interview took around five minutes. The main focus of this interview was on how Marie planned her shopping trip.

Marie stated that she had made two shopping lists the day before, one for the discounter D that included most of the groceries, whereas the second list was for the supermarket C⁹.

STORES NEARBY AND PROPERTIES OF HOUSEHOLD I

Table 4-2

| | Household 1 | Store Type | Brand | Distance* |
|-----------------------------------|---|----------------------------|----------|---------------|
| Description: | Young couple at the age of 25-30 years, not married, without children | Discounter | A | 0.9 km |
| | | Discounter | B | 1.7 km |
| | | Discounter | C | 1.9 km |
| Properties of dwelling: | 50m living space, two-room department on third floor, integrated kitchen, no lift inside the building | <u>Discounter</u> | <u>D</u> | <u>2.1 km</u> |
| | | Discounter | E | 3.3 km |
| | | Supermarket (small) | A | 0.6 km |
| Monthly expenditures on groceries | 220 EUR | Supermarket (large) | B | 1.7 km |
| | | <u>Supermarket (large)</u> | <u>C</u> | <u>2.5 km</u> |
| Dwelling place: | Horn-Lehe, Bremen | Supermarket (small) | D | 3.8 km |
| Survey time: | 2014-07-28 | Drug store | A | 2.5 km |
| | | Beverage Store | A | 2.9 km |

Legend: Chosen store; Planned but not realized

*The Distance is the route from the dwelling to the store, calculated with the route planning software "Google Maps".

Table 4-2: Stores nearby and Properties of Household I

This list included items for dinner (barbecue), which might not be available at the discounter, or she didn't want to buy at the discounter. She assigned her housemate to purchase items when he returned home. Her choice of the discounter is based on the short distance, a good assortment, and that she usually shops there, while other retailers nearby do not offer the same fresh and well priced products. All this information influences Marie's decision and therefore her shopping trip. The participant observation started with the end of the pre-trip interview. Before leaving the dwelling, Marie gathered returnable bottles in a bag. She left the apartment and also took the garbage out for disposal. Arriving downstairs at the entrance of the apartment building, she checked the postbox, before disposing of the garbage. We loaded the car and went to discounter D (5 minutes for 2.1 km). She parked quite near to the discounter's entrance and decided to take a shopping trolley. She then entered the store and started shopping for groceries. In order to acquire the needed items, Marie was often confronted with

⁹ If not explicitly advised, extracts from the interviews and observations in the following chapters regard to the transcripts and protocols of the appendix.

situations where the wanted products were in bad condition, so she had to decide on alternatives. Furthermore, when we talked about the barbecue she suddenly altered her routine in the store in order to purchase specific items for this event. My assistance in sliding the shopping trolley and queuing in line enabled Marie to shop for further items. Also a promotion next to the cash desk led Marie to purchase an unplanned article. After leaving the discounter and driving back at the dwelling, I carried the water and groceries into her apartment. She then mentioned that she would have left the water in the car until her friend had come, if she had been alone. After we entered the dwelling again, and stored all products, we conducted the post-trip interview. The participant's satisfaction of the shopping trip was then enquired into. Marie first mentioned the articles that she could not acquire due to their bad condition, but overall she seemed to be satisfied with the results. Afterwards we talked about household planning again and she said that she usually plans her needs two days in advance and she already knows when her next shopping trip will be.

4.3.2 Identification of Core Categories

Based on 23 sub-categories, a category scheme could be developed that contained the following four core categories, as shown in Table 4-3. The first core category that is chosen is called "A general description of the shopping trip". According to Charmaz (2013) Grounded Theory starts with the question, "what is going on?". So "A general description of the shopping trip" includes codes (sub-categories) that relate to the activities of the shopping process.

The second core category found is called "Guidance of the shopping process". The examination of this household has identified several situations in that the participant suddenly changes her plan and action for shopping for groceries.

CORE CATEGORIES OF HOUSEHOLD I

Table 4-3

| | |
|---|---|
| A general description of the shopping trip | <i>Activities that can be directly observed. These include every step the participant takes during the shopping process from the dwelling to the supermarket and back, until the purchased items are stored at home</i> |
| Guidance of the shopping process | <i>The cognitive level of the participant. These include thoughts and decisions that guide the shopping process.</i> |
| External factors that influence the shopping process | <i>Social influences in the environment that affect the participant's shopping process.</i> |
| Movement of goods | <i>Activities and decisions on the movement of goods that directly and indirectly influence shopping.</i> |

Table 4-3: Core Categories of Household I

For example, Marie changed her route in the discounter as she thought of the event "barbecue" and decided to procure further items that were not listed in her notes. The same

situation that holds for items lacking quality and freshness, also holds when Marie was confronted with an out-of-stock situation. So the second CC includes codes (sub-categories) that relate to decisions that guide the shopper during her shopping process.

The third CC is “External factors that influence the shopping process”. This category depends on the observations that external factors have influenced Marie during her shopping process. External factors are in this sense social constructs. For example, my help by staying in line at the cash desk gave Marie the possibility to procure further items. Also her boyfriend influenced her indirectly proceeding the shopping trip, as she has the task of considering and fulfilling his shopping needs as well. While the “Guidance of the process” relates to circumstances that constitute Marie’s planning and operation, “External factors” relate to the participant’s social environment.

The last core category identified is “Movement of goods”. This category concerns all codes (sub-categories) that relate to decisions and activities the participant made due to the movement of goods. For example, Marie decided to drive by car to the discounter and was therefore able to transport a lot of products to her dwelling. Also the decision to take a shopping trolley might influence the number of items she purchased and handled during the shopping trip.

4.4 Household II

4.4.1 Investigating Household II

Household II is located in the surrounding area of Bremen in the commune of Grasberg. The household is a family of four members. The parents of two grown up children are at the age of 50-55 years, and the children (daughters) are at the age of 20-25 years. The dwelling is a farmhouse which is simultaneously, the parents’ work place. One daughter here called “Sarah” is a student, while the other one is employed by a company. The housekeeper of the household is the mother, here called “Petra”, who was observed and interviewed together with her daughter Sarah during this investigation. So this case offers two participants: the housekeeper, who usually undertakes the shopping task, is the focus. Table 4-4 summarizes the household properties and shows possible grocery outlets nearby. The household was visited at nine o’clock in the morning. After a short briefing, the pre-trip interview was conducted with Petra and Sarah in the kitchen. As with the first investigation, the pre-trip interview started with a focus on how the shopping is planned. Petra mentioned that she usually goes shopping every Thursday and therefore starts to plan the purchases almost one week ahead. In the period between shopping trips, she places a shopping list in the kitchen that is completed by all household members. She first notes daily items that are exhausted, consumed or just missing, by checking the household’s inventory. Later on, she plans the meals of the following week and notes ingredients.

STORES NEARBY AND PROPERTIES OF HOUSEHOLD II

Table 4-4

| | Household II | Store Type | Label | Distance |
|-----------------------------------|---|----------------------------|-----------------|---------------|
| Description: | 4 household members, parents (50-55 years) and grown up children (female 20-25 years) | Discounter | <i>A</i> | 4.4 km |
| | | Discounter | <i>B</i> | 4.5 km |
| | | Discounter | <i>C</i> | 4.6 km |
| Properties of dwelling: | Ca. 200 m living space, house on a farm, kitchen in the first upper floor | <u>Discounter</u> | <u><i>D</i></u> | <u>4.7 km</u> |
| | | Supermarket (large) | <i>A</i> | 4.6 km |
| Monthly expenditures on groceries | 550 EUR | <u>Supermarket (large)</u> | <u><i>B</i></u> | <u>5.0 km</u> |
| | | Beverage Store | <i>A</i> | 4.3 km |
| Dwelling place: | Grasberg, Niedersachsen | <u>Pharmacy</u> | <u><i>A</i></u> | <u>3.2 km</u> |
| | | Pharmacy | <i>B</i> | 5.1 km |
| Survey time: | 2014-07-31 | | | |

Legend: Chosen store

*The Distance is the route from the dwelling to the store, calculated with the route planning software "Google Maps".

Table 4-4: Stores nearby and Properties of Household II

She also splits the list according to the stores where she wants to procure products. Concerning the shopping trip, Petra usually takes the car. She has decided to buy as many products as possible at discounter D to lower costs, and any remaining items would be procured at supermarket B. When the pre-trip interview was finished, we boarded the car that was already loaded with returnable bottles and glass waste. Arriving at discounter D, Petra parked near the entrance and then mentioned that they had forgotten to dispose of the glass waste. They subsequently did that later on. Petra and Sarah got out and took a shopping trolley and entered the discounter. After passing the first corridors, shopping was conducted quite quickly. Also the path they followed seemed to be chosen randomly. A few situations occurred where Sarah and Petra saw products that might offer better solutions to their needs, than planned items. For example, Petra noted on her shopping list fresh fruits for dessert. When she passed the cooling shelf, she identified frozen fruits, and she had to decide on alternatives. The participants also procured items separately from each other whether they were agreed upon, or not. When they passed non-food and promotion shelves, they needed more time than for the regular shelves. When they arrived at the cash desk, they arranged the products according to weight and size on the desk in order to load them easily into their shopping trolley. After payment, they checked the bill and left the discounter. They then loaded the car and realized that they had forgotten to bring a cooling box. Driving to the parking place of supermarket B, they stopped in front of the glass container and disposed of the glass waste. They entered supermarket B with a shopping trolley and started to return the bottles. Petra placed drinks into her trolley in a way to make the cashier's scanning more efficient, by removing single bottles of each type. Again, shopping was conducted quite

quickly and the participants obviously knew exactly what articles they needed and where to acquire them. Shopping was conducted nearly the same way as in the discounter, and the participants again agreed upon items and procured them separately. When they left the supermarket, they made two unplanned stops. First, they bought cakes at a bakery next to the supermarket, and on the way home, they stopped at a pharmacy. When they reached the dwelling, Petra parked the car backwards one meter in front of their back entrance. They unloaded the car and stored all the products. The post-trip interview was then conducted with both participants. Petra and Sarah were both satisfied with their shopping trip and mentioned that they procured all needed items. When the interview focused again on the planning activity of groceries, Petra said that some products are needed regularly such as milk and yoghurt, while others were not. She further added that she didn't note breakfast articles, because she is reminded when seeing them on the shelves. Concerning the operation "shopping" Petra explains that she usually tries to combine several activities with shopping in order to spend less time.

4.4.2 Identification of Core Categories

Based on 30 sub-categories, a category scheme could be developed that identified the following five core categories, shown in Table 4-5.

CORE CATEGORIES OF HOUSEHOLD II

Table 4-5

| | |
|---|---|
| A general description of the shopping trip | <i>Activities that can be directly observed. These include every step the participant takes during the shopping process from the dwelling to the supermarket and back, until the purchased items are stored at home.</i> |
| Determining the process | <i>Decisions the shopper has to make in order to fulfill consumption needs. Circumstances influence these decisions as well as the activities the shopper has made so far. As members communicate their needs the shopper has to rethink the household's needs and therefore to make new decisions in the shopping process.</i> |
| Planning the purchase | <i>All activities and decisions made in order to plan the shopping trip. This refers to operational and strategic planning of the operation "shopping".</i> |
| Handling and storage of goods | <i>Activities and decisions on the handling of goods that directly and indirectly influence the shopping.</i> |

Table 4-5: Core Categories of Household II

The first core category is called "A general description of the shopping trip". This category includes activities that can be observed during the whole shopping trip. The category is the same as found in the investigation of household I.

The second CC is called "Determining the process". This category refers to all activities and decisions the shopper has to make in order to fulfill the consumption needs of the household. These activities and decisions also further influence the process. For example, when the shopping trip started, Sarah and Petra left their dwelling and forgot to take a cooling box. The

consequence being that they couldn't store cooled products separately from the others in the transport means. Furthermore, they had to shop quickly and lost the possibility to combine other activities with the shopping tour, because they had lost the ability to keep goods colder for longer. By forgetting to dispose of the glass wastes, handling problems occurred in the trunk, because the products from the discounter were loaded in front of the glass waste. There were other situations where decisions further influenced the process. When Sarah and Petra talked about the dessert, they agreed on frozen fruits instead of fresh fruits from the shelf. The consequence was that the dessert probably changed and so other items came to the participant's mind that had not been planned previously. Other situations in this category include the dwelling's inventory check during shopping, when one participant asked the other if there was an item in stock or not. In many cases the shopping trip was guided by communication between the participants. They gave advice and reminded each other. They also agreed upon items to purchase and coordinated the procurement during the shopping process.

The third core category that could be identified is "Planning the purchase". This category includes all activities and decisions made in order to plan the shopping trip. It can further be distinguished between the operational and strategic level. On the operation level, planning refers to activities and decisions that may include making a shopping list, budgeting, and choosing a transportation vehicle. On the strategic level, it is about timing, choosing stores, and considering events that might need further products.

The last CC of this investigation is "Handling and storage of goods". This category includes activities and decisions that refer to the handling of goods. For example, Petra decided to park the loaded the car in front of the dwelling's back entrance. This made the unloading more effective and efficient, because less time and effort could be spent.

4.5 Household III

4.5.1 Investigating Household III

The third household is located in Bremen, Horn-Lehe. It is a single household of one male pensioner at the age of 70 years, here called "Uwe". He lives in an apartment on the fourth floor in a building with no lift. He doesn't have a car, so shopping is done by public transport means or by bicycle. Table 4-6 summarizes the properties and stores nearby of household III. The dwelling was visited at nine o'clock in the morning. After a briefing, the pre-trip interview was conducted with the focus on the housekeeper's planning task for the procurement of groceries. Uwe explains that he first considers if guests will visit him over the next few days, or if he will be home alone. He then reviews his inventory for basic foods and decides which products to note on his shopping list. Uwe mentions that he tries to purchase most groceries at the discounter, because the prices are cheaper there. Whereas for fresh

products, he procures from the butcher or weekly market in order to secure freshness and quality. Concerning this shopping trip, the participant's objective was to procure needed items for his lunch. Only two items are noted on the list, including fish or meat from the supermarket and vegetables from the discounter. He decided to go by bicycle, first to supermarket C and afterwards to discounter D.

STORES NEARBY AND PROPERTIES OF HOUSEHOLD III

Table 4-6

| | Household III | Store Type | Brand | Distance* |
|-----------------------------------|---|----------------------------|----------|---------------|
| Description: | Single household, male at the age of 70 years | Discounter | A | 0.8 km |
| Properties of dwelling: | Ca. 60 m living space, apartment on the fourth floor, kitchen in a separate room, no lift inside the building | Discounter | B | 1.6 km |
| | | Discounter | C | 1.8 km |
| | | <u>Discounter</u> | <u>D</u> | <u>1.3 km</u> |
| | | Discounter | E | 3.3 km |
| Monthly expenditures on groceries | No comment | Supermarket (small) | A | 0.4 km |
| | | Supermarket (large) | B | 1.3 km |
| | | <u>Supermarket (large)</u> | <u>C</u> | <u>2.5 km</u> |
| Dwelling place: | Horn-Lehe, Bremen | Supermarket (small) | D | 3.8 km |
| Survey time: | 2014-08-05 | Drug store | A | 2.4 km |
| | | Beverage Store | A | 2.6 km |

Legend: Chosen store

*The Distance is the route from the dwelling to the store, calculated with the route planning software "Google Maps".

Table 4-6: Stores nearby and Properties of Household III

When the pre-trip interview was finished, the shopping trip started. The participant took a backpack, checked the postbox and went by bicycle to an ATM¹⁰ (distance ca. 1km from the dwelling) to get money. Arriving at Supermarket C, Uwe looked at a promotion board and searched for special offers. He then mentioned that he would take the offer for fish, he entered the store and took a shopping basket. During shopping in the supermarket, the participant was overtly looking for special offers several times and said that he would take some products if they were better priced. He took the fish from the shop counter and lined up at the express checkout. At discounter D, the participant again checked the promotion board in front of the store, however without finding interesting offers. He then entered the store with a shopping trolley. Although Uwe had only noted one item on his list (vegetables), he procured several items for the next day's breakfast. When considering this event, where two guests would participate, he took further items. When Uwe passed other shelves he often stated that he's

¹⁰ ATM: Automated teller machine

reluctant to buy some products, because the package size is too large for his consumption purposes. When passing the shelf or vegetables, he twice replaced an item, because of freshness and origin, before he made his decision. When the participant reached the cash desk, he paid by cash, reviewed the bill, and thereafter stored stable products in his backpack. Products that didn't fit in the backpack were taken by hand. When Uwe arrived at home, he stored and unpacked the articles and placed the ingredients for lunch. The post-trip interview was conducted and the participant stated that he was satisfied with the shopping trip. He further explained his chosen route. Because he had already realized that he would buy more products at the discounter, he decided to visit the supermarket first.

4.5.2 Identification of Core categories

Initial coding has increased to 26 categories, and focused coding could merge the sub categories into six CCs. Table 4-7 shows the categories and their definitions.

CORE CATEGORIES OF HOUSEHOLD III

Table 4-7

| | |
|---|--|
| A general description of the shopping trip | <i>Activities that can be directly observed. These include every step the participant takes during the shopping process from the dwelling to the supermarket and back, until the purchased items are stored at home.</i> |
| Considering promotional offers | <i>Decisions and activities that are either made in order to be informed about promoted offers before and while shopping, or in regard to perceived promotions.</i> |
| Product properties determine the purchase decision | <i>Decision and activities that are made due to the properties of the product and therefore guide the shopping trip.</i> |
| Handling | <i>Logistical component the consumer performs, including transportation, handling, and storing of goods.</i> |
| Consideration of needs | <i>Describes the control and consideration of needs during shopping.</i> |
| Planning the shopping trip | <i>Activities and decisions in order to plan the shopping trip.</i> |

Table 4-7: Core Categories of Household III

The core category “A general description of the shopping trip” is the same as in the other investigations that specifies the overall shopping process.

The second core category of this investigation is “Considering promotional offers” that refers to the participant’s perception of promotions. This category includes on the one hand, decisions and activities the participant has made in order to reduce costs due to promotions he is aware of. On the other hand, it is also in regard to randomly perceived promotions.

“Product properties determine the purchase decision” is the third core category. This category summarizes all decisions and activities that were made due to product properties. For

example, when Uwe took a quantity of tomatoes, he checked the items for freshness. He then considered a package of BIO tomatoes and decided to buy them, because of freshness and origin. Also the package size, price, best-before date, and the brand guide the participant's decision and activities during the shopping process.

The fourth core category is called "Handling". This category describes the logistical component the consumer performs. It includes the transport, handling, and storing of products. The fifth core category is "Consideration of needs". Activities and decisions of this category occur during the shopping trip and include thoughts in the form of controls and reminders of needs, as well as the shopper's examination of the shopping list.

The last core category found in this investigation is "Planning the shopping trip". It refers to the consumer's planning of the operation "shopping". Decisions and activities in this category are made before the shopping trip starts and concern activities and decisions such as, route planning, choice of the retailer, and timing.

4.6 Household IV

4.6.1 Investigating Household IV

In contrast to the other households, the fourth is located in the city of Leer, Niedersachsen. The household is a small family with one child at the age of five years. The mother is the housekeeper and responsible for the procurement of groceries. The father is the only person employed and works for a company in the city of Bremen and has to commute. The dwelling is a detached house with a living space of around 300m². The kitchen is located downstairs and offers considerable space for the storage of goods. The family owns two cars, where one is solely used by the mother, here called "Christina". The properties of household IV are shown in Table 4-8. The household was visited at nine o'clock in the morning.

The pre-trip interview was conducted with the housekeeper of the household. The focus again lay on the planning activity Christina had made for that day's shopping trip. At first she mentioned that she organizes the weekly purchases in such a way that she usually makes two shopping trips. According to her procedure, on Mondays she shops for the workweek at discounter B where the products are more convenience orientated. On Fridays, the shopping trip is done at hypermarket A or B that includes more exclusive products in order to cook more elaborately on the weekend. She further adds that she doesn't use a shopping list and knows exactly what she needs. Christina argues that she is aware of the home's inventory levels and identifies her needs by passing the corridors of the supermarket. She only uses a shopping list for items that are uncommon for their normal grocery needs. In regard to this and typically Friday's shopping trips, she combines the return of bottles and dispatching of postal parcels.

STORES NEARBY AND PROPERTIES OF HOUSEHOLD IV

Table 4-8

| | Household IV | Store Type | Brand | Distance* |
|-----------------------------------|---|---------------------|----------|---------------|
| Description: | A family of three members, male at the age of 41 years, female at the age of 40 years and female child at the age five years, one dog, two available cars | Discounter | A | 0.2 km |
| | | Discounter | B | 0.5 km |
| | | Discounter | C | 2.4 km |
| | | Discounter | D | 2.7 km |
| | | Hypermarket | A | 2.4 km |
| Properties of dwelling: | Detached house, ca. 400 m living space, kitchen in a separate room | <u>Hypermarket</u> | <u>B</u> | <u>3.0 km</u> |
| | | Supermarket (large) | A | 4.5 km |
| Monthly expenditures on groceries | 800-1000 EUR | | | |
| Dwelling place: | Leer-Logar, Niedersachsen | | | |
| Survey time: | 2014-08-15 | | | |

Legend: Chosen store

*The Distance is the route from the dwelling to the store, calculated with the route planning software "Google Maps".

Table 4-8: Stores nearby and Properties of Household IV

Concerning this shopping trip, Christina stuck to her usual shopping principals and decided to go by car to hypermarket B, which is located in a shopping mall three kilometers from the dwelling. When the pre-trip interview was finished, the participant and her child got into the car and the shopping trip started. The car was already loaded with boxes of empty bottles, a post parcel, a basket, and two bags. Arriving at the shopping mall's parking area, she had to park the car about 100 meters away from the entrance. She then took a shopping trolley and loaded it with the items from the trunk and entered the mall. She first returned the bottles at a separate station and went to the post Office before she started shopping in the hypermarket.

The participant did not enter all the areas of the hypermarket, but systematically passed through the corridors in order to purchase all possibly needed products. Shopping seemed to be conducted very stressfully. On the one hand, the child often called for attention and on the other hand, the participant had to concentrate on not forgetting needed products. In many situations Christina left the shopping trolley in the main corridor and returned to take products she had almost forgotten. Many of the products taken were priced highly, of private premium brands, and were chosen due to eco and bio qualities. Arriving at the cash desk, the participant placed the goods randomly on the cash desk. While the cashier scanned the articles, she sorted and packed the items according to size and weight in shopping bags and a basket bought from home. She then paid via credit card and visited an ATM before she went back to the car. Arriving at home she stored out all the groceries and the post-trip interview started. Although

Christina didn't use a shopping list she stated that she procured all the needed items and was quite satisfied with the trip. By reviewing the shopping trip, she later mentioned that she only has forgotten two items.

4.6.2 Identification of Core Categories

The investigation of household IV identified four core categories. Table 4-9 illustrates the core categories and definitions. Parallel to the other investigations, the first identified core category is "A general description of the shopping trip".

CORE CATEGORIES OF HOUSEHOLD IV

Table 4-9

| | |
|---|--|
| A general description of the shopping trip | <i>Activities that can be directly observed. These include every step the participant takes during the shopping process from the dwelling to the supermarket and back, until the purchased items are stored at home.</i> |
| Handling and storage of goods | <i>Decisions and activities that are made due to the handling, storage, and transportation of goods.</i> |
| Procuring the needed products | <i>Decisions and activities that relate to the procurement of products at the store level. It further relates to the housekeeper's thoughts due to purchase decisions.</i> |
| Planning the shopping trip | <i>Decisions the housekeeper makes on a strategic level. It relates to the consideration of needed items and the planning of the shopping trip.</i> |

Table 4-9: Core Categories of Household IV

The second core category is "Handling and storage of goods". This category is the logistical dimension of the shopping process and summarizes all observable logistic activities the housekeeper performed during the shopping process. It includes the handling, transportation, and storage of goods in general, but also relates to decisions and activities the shopper has made in order to make handling task easier. For example, Christina decided to take a basket and two bags for the shopping trip. When she arrived at the cash desk, she sorted and packed the items in the bags and basket while the cashier scanned the products. By doing this, she spent less time and avoided some effort by loading the car with the already packed bags and basket.

The third core category is "Procuring the needed items". This category summarizes purchase decisions and activities the shopper made at the store level in order to fulfill their planned needs. Christina mentioned in the pre-trip interview that she doesn't use a shopping list and she knows exactly which articles she needs. Instead of a list as a reminder, she operates systematically at the store level. She passes all corridors which she perceives as important and tries to scan all relevant products she might need to buy. The category further includes purchase decisions the shopper makes. On the one hand, these are due to several factors such as experience and product properties and on the other hand, the procured goods lead the

shopper to think about the purpose of usage. Other items can be associated and noted in the shopper's mental shopping list.

The last core category found in this investigation is "Planning the shopping trip". This category includes all activities and decisions which are made at the strategic level. This category is about the management and planning of the shopping trip and also refers to the consideration of needs. For example, Christina stated in the interviews that she makes two shopping trips, one for the weekend and the other one for the working week. So based on the household's habits and events (such as cooking), the housekeeper considers needs. Further decisions on how and where shopping is conducted are then made.

4.7 Comparison of the Households

4.7.1 Establishment of common Categories

In order to compare the findings of the four different investigations, it is necessary to develop areas and dimensions that enable an appropriate comparison of the four households. Because each household represents a unique case due to their type, the shopping process is rather focused on individual structures. The category schemes summarize the characteristics of each shopping process and provide an adequate basis for the following comparison. As shown in Table 4-10, the category schemes include several sub- and core- categories that differ and resemble others to a certain degree.

CATEGORY SCHEMES OF THE HOUSEHOLDS

Table 4-10

| Household I | Household II | Household III | Household IV |
|--|--|---|---|
| <ul style="list-style-type: none"> • A general description of the shopping process <ul style="list-style-type: none"> ○ Activities besides ○ On the way to the discounter ○ Shopping at the discounter ○ On the way back • External factors that influence the shopping process <ul style="list-style-type: none"> ○ Thinking of household members ○ Interaction with researcher ○ Making Use of Help ○ Influence of promotions • Guidance of the shopping process <ul style="list-style-type: none"> ○ Consideration of events ○ Quality of product is not satisfying ○ Choosing alternatives ○ Shopping list as a reminder ○ Reviewing home inventory levels ○ Shopper's uncertainty for products ○ Planning the operation ○ Experience of the shopper ○ Price of products • Movement of goods <ul style="list-style-type: none"> ○ Handling and storage at home ○ Transportation of goods ○ Handling of items in the store ○ Shopping aids | <ul style="list-style-type: none"> • A general description of the shopping process <ul style="list-style-type: none"> ○ Preparing the shopping trip ○ On the way to the discounter ○ Shopping at the discounter ○ On the way to the supermarket ○ Shopping at the supermarket ○ On the way back ○ Combining shopping with other tasks • Determining the process <ul style="list-style-type: none"> ○ Shopper Communication <ul style="list-style-type: none"> ▪ Meeting an acquaintance/friend ▪ Giving advice ▪ Reviewing home inventory levels ▪ Agreeing on a purchase decision ▪ Remembering not to forget ○ Handling of items influence the shopping process ○ Product properties influence the shopping process ○ Home's inventory influence the shopping process • Handling and storage of goods <ul style="list-style-type: none"> ○ Labor division due to product handling ○ Using shopping aids ○ Arrangement and storage of items ○ Obstacles that influence the handling activity • Planning the purchase <ul style="list-style-type: none"> ○ Writing a shopping list <ul style="list-style-type: none"> ▪ Noting items due to inventory ▪ Noting items due to cooking ▪ Noting items due to household members ○ Scheduling the shopping trip ○ Choosing the shopping location ○ Considering forthcoming events ○ Choosing a transport vehicle ○ Budgeting the shopping ○ Considering other tasks | <ul style="list-style-type: none"> • A general description of the shopping process <ul style="list-style-type: none"> ○ On the way to the supermarket ○ Within the Supermarket ○ On the Way to the discounter ○ Shopping at the discounter ○ On the way back ○ Activities besides ○ Activities at home • Considering promotional offers <ul style="list-style-type: none"> ○ Searching actively for promotional offers ○ Being influenced by promotional offers • Product properties determine the purchase decision <ul style="list-style-type: none"> ○ Package size of goods doesn't satisfy the shopper's needs ○ Quality of goods doesn't satisfy the shopper's needs ○ Freshness of products doesn't satisfy the shopper's needs ○ Origin of products doesn't satisfy the shopper's needs ○ Best-before date of products doesn't satisfy the shopper's needs ○ Brand of products doesn't satisfy the shopper's needs ○ Price of products is too expensive • Consideration of needs <ul style="list-style-type: none"> ○ Consideration of needs due to forthcoming events ○ Consideration of needs due to habits ○ Review of purchased items ○ Consideration of needs by seeing a product on the shelf • Handling <ul style="list-style-type: none"> ○ Using shopping aids ○ Storage of products • Planning the shopping trip <ul style="list-style-type: none"> ○ Thinking of basic needs ○ Selecting store to visit ○ Writing a shopping list ○ Planning the operation | <ul style="list-style-type: none"> • A general description of the shopping process <ul style="list-style-type: none"> ○ On the way to the shopping mall ○ Shopping at the hypermarket ○ Inside the shopping mall ○ Preparing the shopping trip ○ Activities besides • Handling and storage of goods <ul style="list-style-type: none"> ○ Using shopping aids ○ Handling the goods • Procuring the needed products <ul style="list-style-type: none"> ○ Consideration of product attributes ○ Checking the home's inventory ○ Applied systematic shopping ○ Experience due to brand ○ Planning the forthcoming week due to products • Planning the shopping trip <ul style="list-style-type: none"> ○ What items are needed? <ul style="list-style-type: none"> ▪ Considering needs due to inventory ▪ Considering needs due to habits ▪ Considering needs due to events ○ Where to do shopping? ○ How many items are needed? |

Table 4-10: Category Schemes of the Households

For example, the first core category “A general description of the shopping process” could be identified in all four investigations. Although the related sub-categories differ, the meanings of the core categories are the same. This doesn’t hold for e.g. the CC of household I “Guidance of the shopping trip” and the CC of household II “Determining the process”. Because, “Guidance of the shopping trip” is defined more broadly and therefore includes planning activity which is summarized by an individual CC of household II. In order to make a horizontal comparison, only sub-categories are considered to avoid the previously mentioned problem. This is done by grouping similar sub-categories to factors. Beginning with the sub-categories that describe and relate to the shopping process, two groups or areas could be identified. One area concerns the planning phase and represents the strategic level, whereas the other one relates to shopping and is at the operational level. The operation “shopping” includes the sub-categories of the CC “A general description of the shopping process” and sub-categories that relate to logistic activities. Table 4-11 presents the grouping of the process-describing sub-categories. In contrast to the process-describing sub-categories, the remaining ones influence the shopping process and are therefore defined as variables. An aggregation of these categories leads to four areas. The first area refers to inter-related factors. This area includes the communication between the household and outside. In contrast, the second area includes intra-related factors which influence the strategic and operational level, such as the communication between household members and their agreement on shopping items.

DIFFERENTIATING BETWEEN STRATEGY AND OPERATION

Table 4-11

| Strategic-Level (PLANNING) | Operational-Level (SHOPPING) |
|--|---|
| <ul style="list-style-type: none"> • Budgeting the shopping • Choosing a transport vehicle • Choosing the shopping location • Considering forthcoming events • Considering other tasks • Planning the operation • Scheduling the shopping trip • Selecting which store to visit • Writing a shopping list | <ul style="list-style-type: none"> • Activities at home • Activities besides • Combining shopping with other tasks • Handling and storage at home • Handling of items in the store • Handling of items that influence the shopping process • Handling goods • Inside the shopping mall • On the way back • On the way to the discounter • On the way to the shopping mall • On the way to the supermarket • Preparing the shopping trip • Shopping at the discounter • Shopping at the hypermarket • Shopping at the supermarket • Storage of products • Transportation of goods • Using shopping aids • Within the Supermarket |

Table 4-11: Differentiating between Strategy and Operation

Decisions the shopper makes in accordance to motives and incentives, which only affect him or her relate to this area as well. The third and fourth areas refer to the structures of the household and the retailer. While the household’s inventory and properties influence the shopping process, the supply of goods at the supermarket additionally determines the household’s activities and decisions of their shopping. A detailed assignment of the sub-categories to the areas of process and variables are illustrated in Table 4-12.

BRINGING CATEGORIES IN RELATION

Table 4-12

| | Influencing variables | | | |
|-------------------------------------|---|---|--|--|
| | Inter-related factors which influence the housekeeper’s decisions and activities | Intra-related factors which influence the housekeeper’s decisions and activities | Inventory, properties of the dwelling, and the structure of the household | Offers, supply, and structure of the retailer |
| Strategic-Level (PLANNING) | <ul style="list-style-type: none"> Noting items due to cooking | <ul style="list-style-type: none"> Thinking of basic needs Considering the needs due to habits Noting items due to household members | <ul style="list-style-type: none"> Noting items due to inventory Considering needs due to inventory | <ul style="list-style-type: none"> Where to do the shopping? How many items are needed? Searching actively for promotional offers |
| Operational-Level (SHOPPING) | <ul style="list-style-type: none"> Consideration of events Interaction with researcher Labor division due to product handling Making Use of Help Meeting an acquaintance/friend Obstacles that influence the handling activity Reviewing home inventory levels Consideration of needs due to forthcoming events | <ul style="list-style-type: none"> Consideration of needs by seeing a product in the shelf Consideration of needs due to habits Experience of the shopper Consideration of product attributes Applied systematic shopping Experience due to brand Planning the forthcoming week due to products Remembering not to forget Shopper Communication Giving advice Agreeing on a purchase decision Thinking of household members | <ul style="list-style-type: none"> Handling and storage at home Home’s inventory influences the shopping process Reviewing home inventory levels Review of purchased items Shopping list as a reminder Checking the home’s inventory | <ul style="list-style-type: none"> Choosing alternatives Freshness of product doesn’t satisfy the shopper’s needs Being influenced by promotional offers Influence by promotions Package size of good doesn’t satisfy the shopper’s needs Price of products Product properties influence the shopping process Quality of goods doesn’t satisfy the shopper’s needs Quality of products is not satisfying Shopper’s uncertainty due to products Shopping Aids Using shopping aids Origin of products doesn’t satisfy the shopper’s needs Best-before date of products doesn’t satisfy the shopper’s needs Brand of products doesn’t satisfy the shopper’s needs Price of product is too expensive |

Table 4-12: Bringing Categories in Relation

By relating the process (planning and operation) with the influencing variables as shown in Table 4-13, eight dimensions (A-H) can be identified. Each dimension relates to the influence of one variable either at the strategic level, or the operational level.

EIGHT DIMENSION AS A BASIS FOR COMPARISON

Table 4-13

| | Inter-related factors which influence the housekeeper's decisions and activities | Intra-related factors which influence the housekeeper's decisions and activities | Household structure which influence the housekeeper's decisions and activities | Supplier structure which influence the housekeeper's decisions and activities |
|------------------------------|--|--|--|---|
| Strategic-Level (PLANNING) | A | C | E | G |
| Operational-Level (SHOPPING) | B | D | F | H |

Table 4-13: Eight Dimensions as a Basis for Comparison

4.7.2 Dimensioning the four Households

In the previous section, sub-categories of the four different category schemes were grouped into eight fields that present dimensions. According to these dimensions the four examined households will now be compared.

Dimension A: To what degree do inter-related factors influence the management and planning activities of the housekeeper?

Inter-related factors influence the planning process in two ways. If there already exists a planned event, such as a barbecue as in the case of household I, the housekeeper's assortments need items due to this event. On the other hand, the consumer plans meals (events) due to their stocked groceries. All participants stated in the interviews that they consider their needs due to the meals they are going to cook. The housekeeper of Household IV "Christina" makes two different shopping trips a week, one for the working week on Mondays, and the other one on Fridays for the weekend. She argues her schedule meets with the habits of the household. Because the working week is very stressful with less time for cooking, the needed products are more convenience oriented, whereas the weekend is characterized by more extravagant meals. So the influence of planned meals is generic, while other events such as an impending visit by friends would be more special.

Dimension B: To what degree do inter-related factors influence the shopping and logistics activities of the housekeeper?

The participant of household III "Uwe" noted two items or needs on the shopping list. By entering the discounter (second store) he suddenly procured items for the next day's breakfast

he had planned together with guests. By seeing products, Uwe made further purchase decisions due to the event “breakfast”. The participant of household I “Marie” stated in the pre-trip interview that some of her noted products are for a barbecue in the evening. At the discounter she also procured unplanned items for this event. When she talked about her plans in the evening (watching a movie) she suddenly went back and took a can of nuts. Households II and IV on the other hand didn’t mention concrete events. Nevertheless, all investigated housekeepers could be observed with taking items for several planned meals, which are events as well. It is also possible that the consumer creates a meal according to the products he recognizes in the store. The housekeeper of household III “Uwe” started shopping at the supermarket with the intention of buying either fish, or meat. He decided for the promoted fish and procured suitable sides dishes at the discounter. This dimension is generic, as purchases are planned towards events in which the household members will participate.

Dimension C: To what degree do intra-related factors influence the management and planning activities of the housekeeper?

Intra-related factors relate to the communication and agreement between the household members. This dimension influences the household’s planning process if the household consists of more than one person. While the housekeeper of household III “Uwe” only has to consider his needs, the other households have to communicate with their members and consider their needs collectively. However, in the multi-member households, the housekeeper was the person who accomplished the planning process mainly on her own. The housekeeper of household II “Petra” involves the other members in her planning process by placing a shopping list in the kitchen several days before the trip starts. So planning becomes transparent to all members. The participant of household II “Marie” places the shopping list similarly a few hours before shopping starts. In contrast to the other households, it’s not always the housekeeper who procures the groceries. In some cases Marie assigns her partner to shop. So communication between the household members is more important than when compared to other households, where the shopping task is explicitly regulated. Dimension A especially influences multi-member households, wherein the executer of shopping changes.

Dimension D: To what degree do intra-related factors influence the shopping and logistic activities of the housekeeper?

The housekeeper of Household II “Petra” performed the shopping trip together with another member of the household “Sarah”. They agreed upon items to purchase and coordinated the procurement of goods as they took products separately and shared the occurring tasks. The participant of Household IV “Christina” shopped together with her five year old daughter. Although the child did not participate to the procurement, she influenced the mother’s purchase decisions, as Christina asked her what to buy for dessert. Both The other households had only one participant who undertook the shopping task. They were not directly influenced

by other household members. The participant of household I “Marie” purchased a six-pack of water (2l bottles) and mentioned when unloading the car, that she normally leaves the drinks in the trunk of the car, and assigns her partner to carry them upstairs. The participant of the single household III “Uwe” cannot be influenced by other household members. But he influences himself, as he considers his needs due to his habits. This also holds for all the other participants. The intra-related factors influence the shopping trip particularly if the consumer shops together with other household members.

Dimension E: To what degree does the household structure and the properties of the dwelling influence the planning activities of the housekeeper?

All participants stated their shopping frequency in the interview. Households II and IV have fixed times when they shop for groceries, whereas the smaller households perform shopping more frequently. The participant of household II “Petra” explained that she usually plans one shopping trip a week, because farming involves the household members, so the week requires comprehensive planning. Household IV on the other hand performs two shopping trips a week, one for the working week, and the other one for the weekend. The participant of household IV “Christina” argues that the activities between the working week and the weekend differ so much that she has to make two different shopping trips. The dwelling properties of household II and IV are quite different compared to the smaller households. Due to income and the number of household members, both dwellings are houses with a lot of storage space. Household I and III are located in apartments on upper floors. Both dwellings have no lift inside and the kitchens are smaller compared to the other households. Also, the monthly expenditures are far less. The participant of household III “Uwe” explained that he has to plan at least three shopping trips a week. Because he cannot carry boxes of drinks upstairs, he has to procure drinks in single bottles. The participant of household I “Marie” explained that they schedule their needs only two or three days ahead, because they are not able to store so much frozen food. While Uwe has only to consider his needs, the other housekeepers have to incorporate other members into the planning process to a certain degree. So the household structure and the properties of the dwelling determine the way shopping is planned.

Dimension F: To what degree do the household structure and the properties of the dwelling influence the shopping and logistic activities of the housekeeper?

The participant of household III “Uwe” was often confronted with the situation where he decided against a needed item, because the package size was either too large for his purpose, or the single units were too expensive. The participant of household I “Marie” is constrained in the purchase of frozen goods, because her storage capabilities are too small. In contrast, the participant of household IV “Christina” mentioned in the post-trip interview, that she didn’t need to buy ahead, because the stock capacity of the refrigerator suffices for the whole week.

All participants considered their dwelling properties and their household structure when they made purchase decisions. Although three of the participants used a shopping list, they still had to decide on the quantity of units by considering their dwelling's storage capacity, their price readiness to pay besides other criteria. All the prepared shopping lists didn't contain the needed quantities and readiness to pay. Nevertheless, the participant of household II "Petra" noted exact prices next to some listed products. In the post-trip interviews, all participants evaluated their shopping performance as good, due to the accomplishment of their set objectives. However, it could be observed that the participants with a shopping list procured more products than were originally planned. So the planning phase obviously still occurs during shopping. Before arriving at the cash desk, all the participants asked themselves if they had procured all the needed items. So the household structure and the properties of the dwelling influence the consumer at the store level, as consumers have to finalize their planning.

Dimension G: To what degree do the supply, offers, and structure of the retailer influence the planning activities of the housekeeper?

The participant of household III "Uwe" was influenced by the supply of goods from the retailers during his planning activity. He stated in the interviews that he is usually informed about promoted offers before he goes shopping. The participant of household II "Petra" explained during the observation that she notes needed items on her shopping list 'in her mind when she enters the store. So she knows exactly what goods the supermarket supplies. Also "Christina" the participant of household IV knows exactly the structure of the hypermarket where she usually goes shopping. Therefore, she shops without a shopping list and systematically passes the necessary areas of the store in order to procure all needed items, and not to forget any. The participant of household I "Marie" argued for her decision to shop at the discounter due to their low prices and that shopping is easier there. Because she knows from experience where articles are placed and which products are offered, she avoids the effort of searching for items. Dimension G is generic to all habitual shopping trips. Because shopping of groceries is routine and part of the weekly tasks, it is repetitively done at grocery retailers near to the dwelling. So experience leads to a manifestation of the retailer's supply and structure in the minds of the shoppers. Also promoted offers can influence the consumer's planning activity if they are perceived as relevant.

Dimension H: To what degree do the supply, offers, and structure of the retailer influence the shopping and logistic activities of the housekeeper?

The participant of Household I "Marie" mentioned in the pre-trip interview that she had decided to shop at the discounter because of the good and fresh vegetables that other supermarkets didn't provide. So the consumer has several expectations due to the goods supply of the retailer. Based on expectations, the operation is planned including the choice of

store. Also, the participant of household III “Uwe” was first informed about promoted offers on the information board in front of the supermarket, before he entered the store. If these expectations cannot be fulfilled, the consumer has to decide on alternatives or has to rethink the planned operation. This happens when the consumer is confronted with an out-of-stock situation that can be due to a missing product, or due to bad product conditions. This happened to all participants, so they had to decide on whether or not to choose an alternative, go without the product, or to visit another store. In contrast, promoted or just offered products can lead the consumer to restructure their needs, as the participant of household I “Marie” spontaneously identified frozen fish, she planned a meal (event) and considered further items. Also the structure of the supermarket, which includes the spatial arrangement of products, shelves, and areas, and the offering of shopping aids, can influence the consumer’s shopping process. For example, Petra had to pass the supermarket towards an unusual route, because she decided to return bottles first. Christina applied a systematic method in the hypermarket in order to procure all needed items, and not to forget one. So the last dimension is also generic to the shopping process.

5 Theoretical Sampling

5.1 General Introduction

In order to gain a comprehensive understanding of CL, this study assumed the household's CL engagement as a social phenomenon. Because social interactions result in behavior and therefore in activities and decisions, the phenomenon was effectively addressed by the Grounded Approach. In order to derive theoretical underpinnings, this study proceeds interpretatively. Theoretical sampling starts with the conceptualization of the studied phenomenon. Gathered data from the investigations and literature on CL are used as a basis to derive initial assumptions. Based on these assumptions a process model is suggested. By assuming an optimal CL process, a benchmark is set. An adequate CL process, which represents that of the studied household's, is compared to illustrate how efficiency and effectiveness might occur. A first proposition is derived in regard to CL performance (Chapter 5.2). In order to prescribe CL, findings from Chapter 4 are further interpreted and the household's planning is illustrated in the form of order processing. From this, a second proposition is derived, and possible initial solutions are suggested to optimize CL in terms of efficiency and effectiveness (Chapter 5.3).

5.2 Describing Consumer Logistics

By considering the household as a system according to Granzin and Bahn (1989), this study provides similarities that support this perspective. Beginning with the system task, it can be interpreted that households engage in CL activities to feed the system with inputs to satisfy their needs. In general, this process includes several interrelated activities and decisions in the procurement of products, which are realized in the planning and operation of shopping. Households differ in regards to their structure, and activities and decisions are conducted differently as well, however the system's purpose is the same. The content analysis in chapter 4 provided several categories, which relate to system characteristics, such as objects, activities, and especially interrelatedness. So a system approach becomes more understandable.

To describe the system process of planning and operation of grocery shopping it becomes difficult to generalize. Even though the system process is a sequence of decisions and activities, they are extremely individual and interrelated, making each household system different in this regard. While the process model from Granzin and Bahn (1989) and CL functions proposed by Granzin (1990) narrow this sequence, a general schedule as to how CL activities occur during the system process might be difficult to define. Nevertheless, this study provides insights that can be used to describe the system process in more detail. First, CL has to be differentiated between CL operations and CL planning. As CL includes the logistical activities the consumer conducts to distribute the products from POS to POC, the CL

operations includes activities and decisions associated to the transportation, handling, and picking of products (see Teller and Kotzab, 2004). CL planning, on the other hand, can be interpreted as activities and decisions that guide the CL operation. In this regard, CL planning includes the system's goal setting, as households allocate their needs through communication amongst the household members, or by writing a shopping list, and also includes the strategic scheduling of the operation, as consumers decide on e.g. stores, vehicles, and routes. So the CL process can be interpreted as a sequence of operative CL activities and decisions, which are guided by CL planning.

The CL process can be divided into two phases, which are the planning phase, followed by the operational phase (shopping). However, this separation causes problems due to the temporal classification of the appearance of activities and decisions. By considering identified CL functions from Granzin (1990) it can be noticed that most functions refer to CL planning, whereby only "Transport-related materials handling" represent the previously interpreted CL operation. Moreover, the insights from this investigation show that CL planning happened on the way to the supermarket, within the supermarket, and even on the way back home. Although it is logical that consumers plan their operation at first, and then start to shop, the planning phase obviously occurs during the whole purchasing process. It could be observed that the participated households procured more products than were originally planned, so purchasing decisions involved further planning of the operation. Also out-of-stock situations led the participants to consider substitutes and to reschedule the operation. So planning overlaps the operation.

The participated shopping trips were on the one hand individual, but can all be characterized because of patterns. According to Chapter 2, grocery shopping trips are made habitually, so daily routines determine the way shopping is conducted. It could be observed and concluded from the interviews that all participants follow routines during their shopping, as they have, more or less, fixed shopping times, visit stores recurrently, and exactly know the supply of goods. By comparing the different types of households due to their engagement in Consumer Logistics, four influencing variables were identified: inter-related factors, intra-related factors, household structure, and supplier structure (Chapter 4). These variables are assumed as generic, and influence grocery shopping in general. The four variables represent on the one hand, the social interactions within the household and its environment, and on the other hand, the structural influence by the household and the supplier. So CL patterns can be attributed to variables that Granzin, Painter, and Valentin (1997) refer to: demographics and consumer behavior, whereas Teller, Kotzab, and Grant (2006) refer to store types. So the influencing variables determine the shopping process to a certain degree, and therefore CL as well. Although these components affect shopping generically, they also make the household's engagement in grocery shopping individual.

System performance can be evaluated in relation to the accomplishment of goals. As mentioned in Chapter 2, effectiveness and efficiency as criteria for evaluation are difficult to use, because personal modality determines the goal and the undertaken effort. All participants stated in the post-trip interviews that they were satisfied in regard to their shopping trips, as they could allocate all needed items to an appropriate undertaken effort. So their evaluations are subjective. But are the investigated shopping trips performed most efficiently and effectively? To answer this question, the CL components of planning and operation are now explained in more detail, according to insights from this study.

By maintaining the perspective of the household as a system, the planning activity comprises of goal setting that constitutes the activities and therefore the system's process. By considering logistics, the household's goal can be interpreted as an order, which the members have to fulfill with the right quantities, within the right time, and efficiently and effectively. So in optimal, the order is established before the operations starts, and activities and decisions were made due to efficiency and effectiveness criteria to accomplish it. However, the participated household managers, "Marie" (I), "Petra" (II), and "Uwe" (III) procured more items than listed on their shopping lists. Also "Christina" (IV) could be observed when she spontaneously decided on items to purchase that she hadn't had in mind before. From these observations, the conclusion becomes obvious that the participants didn't or were not able to exactly plan their needs. So the participants engaged in further planning activities in the operational shopping phase. The eight dimensions, which describe the effect from the influencing variables on planning and operation, can help to explain how and why planning overlaps the operational phase. According to dimension A, which describes the effect of inter-related factors on planning, the household manager has to consider events. Events can either be Christmas, Easter, or events in the consumer's hometown where he wants to participate, or can be instigated by the consumer himself such as a barbecue, or meetings with friends. So the household manager, who acts as a representative of the household members, has to consider all relevant events and derive the according needs. If the order in the form of a written or mental shopping list is not complete, the consumer might recognize needs by going shopping, as he associates events due to products or vice versa (Dimension B). The effect from intra-related factors on planning can be concluded in dimension C. Household members have to communicate their needs to the manager to secure a complete order. If communication is constrained due to asymmetry or non-transparency, e.g. if household members demand the same product, but different brands, the consumer may receive fewer and incorrect products. Planning then happens during shopping, as the consumer associates possible needs due to products or vice versa, which might satisfy the household members. If the household manager is accompanied by other members during shopping, this uncertainty may be reduced, because coordination and arrangement are made simultaneously (Dimension D).

The household's planning is also influenced by the household structure (Dimension E). While social interactions (intra- and inter-related factors) influence planning especially due to the allocation of needs in terms of concrete products or brands, the dwellings structure places conditions on needed items. For example, storage capacity (size of refrigerator, fridge, worktop, etc.) constrain the consumer to relate properties to the needed items, such as size, quantity, and best-before-date. The household's income and number of household members influence the willingness to pay. A car, might give the possibility to procure more products, and to visit stores further afar. The dwelling structure effects planning in two ways: on the strategic level, as the consumer has to decide on distance, vehicle, frequency to shop, etc., and on the determination of product properties to better counter the given circumstance. The consideration of the dwelling structure in regards to planning constitutes intensive calculation (consumption-rates, storage-capacity, etc.) and specification of needed products (package size, weight, quantity of units, etc.), as well as the strategic planning of the operation. Simultaneously, this dimension might have a huge impact on CL, if planning has been undertaken insufficiently (Dimension F).

The opposite of the dwelling structure is the supplier's structure (Dimension G). The investigated households all stated that they have specific shopping routines, and usually prefer two or three stores in the vicinity of their dwellings. So they all visit stores repeatedly and therefore know the supply, layout, and display of the shelves. Furthermore, they have experience and expectations due to the offered products. So the structure of the supplier influences the household manager in regard to planning. The participant of household II "Petra" mentioned that she writes her shopping list by shopping mentally. The participant of household IV "Christina" argued that she avoids using a shopping list, because she knows the exact assortment of the store. These insights support the assumptions that consumers list items in accordance to the question: "What products does the store offer, and which of them do I need?" rather than to: "What products do I need, and which of them are offered by the store?" So the communicated marketing mix, and the consumer's experience raise expectations from the consumer that needed products are available at the store. If expectations cannot be addressed, for example, if consumers are confronted with out-of-stock situations, whereby the product is not stocked in the shelf, or not in the right conditions, the consumer has to decide on a substitute. This decision might result in another brand, another product, or in a change of store (see also figure 2-2). Moreover, the consumer is then engaged in further CL activities (Dimension H).

The mentioned influencing factors might determine to which intensity planning is conducted, and to which intensity the intervention of planning in the operational phase happens.

According to the investigated social phenomenon, which was the household's engagement in CL, the CL process consists of two sequenced phases that included planning and shopping of

groceries. To delimit the phases, it can be interpreted and partially observed that planning included the contemplation of needed products, the preparation of shopping lists, and the scheduling of operative tasks. The operational phase included the conducting of shopping, which immediately followed. Overall, the planning phase of the participated households was shorter than the operational phase, which leads to the assumption:

- **The planning phase is shorter than the operation phase (A1)**

In order to fulfill household needs, consumers have to allocate resources. The usage of resources can be interpreted as planning and shopping effort. While shopping includes more physical activities, and planning is mainly conducted cognitively: the following assumption rises:

- **The effort invested in CL planning is less intensive than the effort invested in CL operation (A2)**

The planning phase incorporates several elements, including the generation of a shopping list of needed items. The shopping list may be incomplete if items are overlooked. During the operational phase, when the consumer is in the process of shopping, this oversight may be realized and the consumer expends additional effort when he or she adds the item(s) to their cart. This could be viewed as an overlap of the planning phase into the operational phase and therefore gives rise to the following assumptions:

- **When the planning phase overlaps into the operational phase, planning is conducted during shopping to complete the order and therefore the order becomes more precise (A3).**
- **CL planning is extended and lengthens the shopping process, and therefore the operational phase, unless the order is pre-planned precisely (A4).**

When planning happens during shopping, consumers consider further needs by associating products due to events and household members, and vice versa, and therefore have to reschedule the operation in order to satisfy these needs. For example, the participant of household I “Marie” associated a needed product (nuts) due to the forthcoming barbecue event. In order to realize this need, she had to go back near the discounter’s entrance to pick this article. If she had planned nuts in the household’s order before shopping, the schedule of the operation would have avoided this additional effort. The participant of household IV “Christina” was in situations several times, where she passed shelves and then realized that she had forgotten to take a needed item.

So she went back to pick the item. In regard to this, the assumptions rise:

- **The overlap of planning and operations extend the CL process, as purchases are realized less quickly (A5)**
- **The effort of the CL operation becomes more intensive, while CL planning is conducted in the operation phase (A6).**

Figure 5-1 shows an optimal CL process. This process comprises a complete establishment of the order within the planning phase. The operational phase then includes the conduction of operative CL tasks and the purchases are realized most efficiently and effectively.

AN OPTIMAL CL PROCESS

Figure 5-1

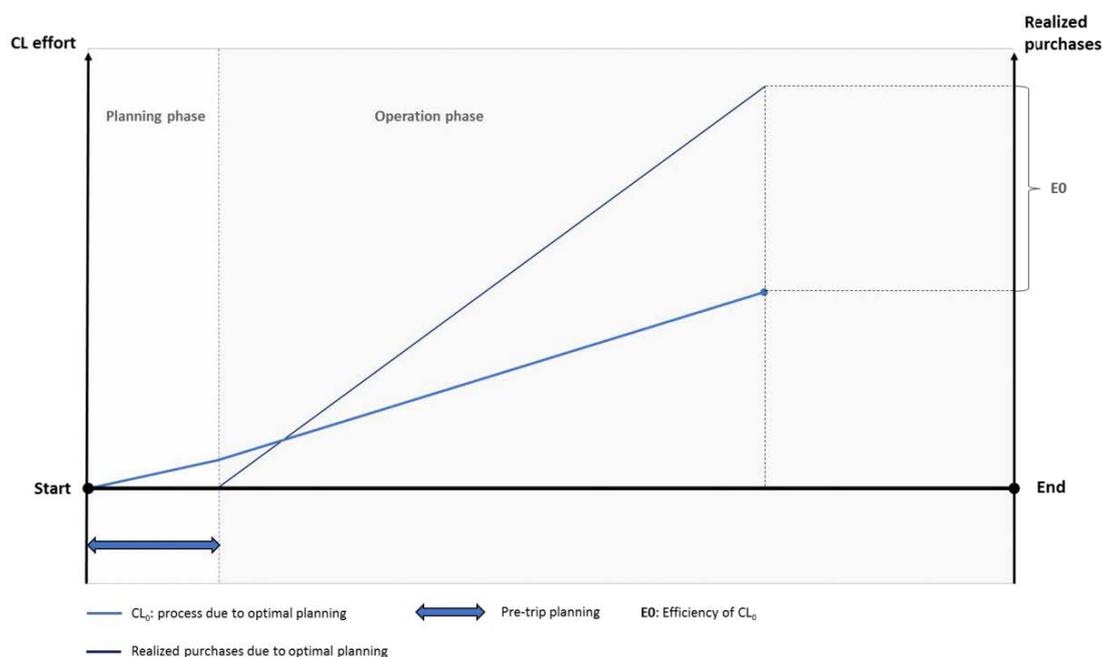


Figure 5-1: An Optimal CL Process

On the other hand, a representative CL process in accordance to the investigated households is presented in Figure 5-2. The planning phase is kept short and CL planning overlaps into the operational phase. As long as the overlap exists, CL effort increases overproportional. When the overlap stops, only operative CL tasks are conducted and the effort is less intensive.

A REPRESENTATIVE CL PROCESS

Figure 5-2

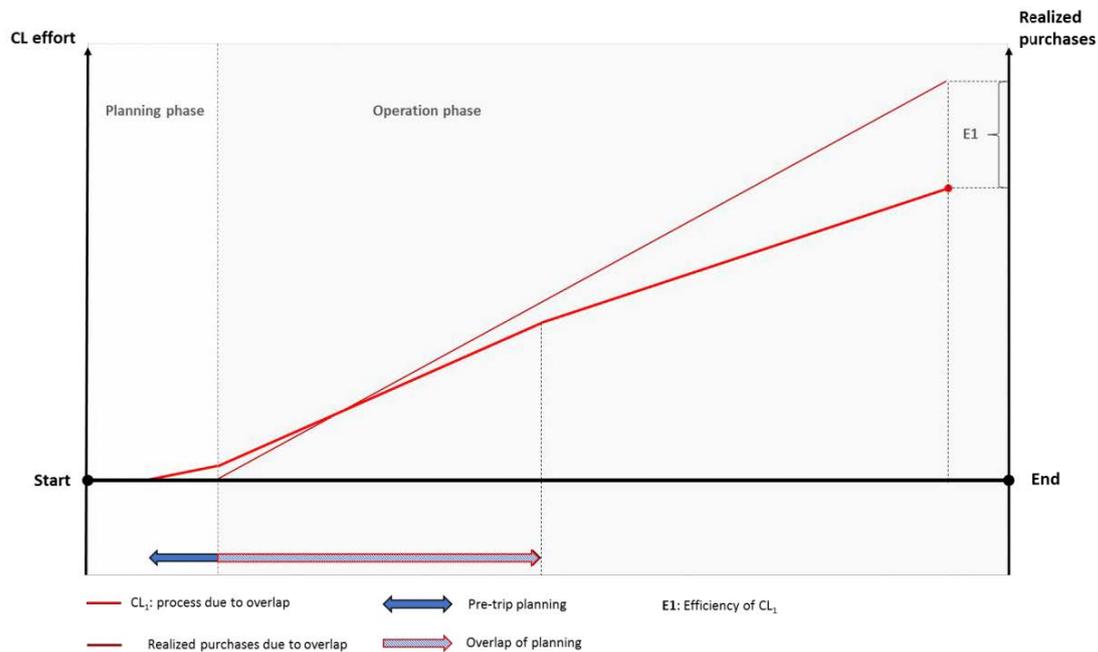


Figure 5-2: A Representative CL Process

Figure 5-3 captures assumptions A1-A6 in a process model. Two processes are illustrated that describe the investigated social phenomenon CL. The blue line represents the CL process due to optimal planning (CL_0), which results in a complete order before shopping is conducted. The consumer therefore doesn't consider further needs during shopping and adjusts the operation to the pre-planned schedule.

The red line represents a CL process whereby the planning phase is kept shorter and CL planning overlaps the operation phase, as the consumer considers further needs during shopping (CL_1). Both CL processes realize the same needs. The planning phase of CL_0 is longer and more resources are utilized compared to CL_1 . While CL_0 makes a complete order during the planning phase, CL_1 makes an incomplete order, so that further CL planning is conducted in the operational phase and less resources are utilized. During the operational phase, the effort of CL increases more intensively (see A2). CL_0 increases proportionally in relation to the realized purchases until the process ends. Whereas the effort of CL_1 becomes more intensive as long as the overlap exists (see A6). When CL planning stops, the effort of CL_1 is proportional, too. CL_0 ends, while CL_1 is still in process until the order is accomplished (see A3, A4, A5).

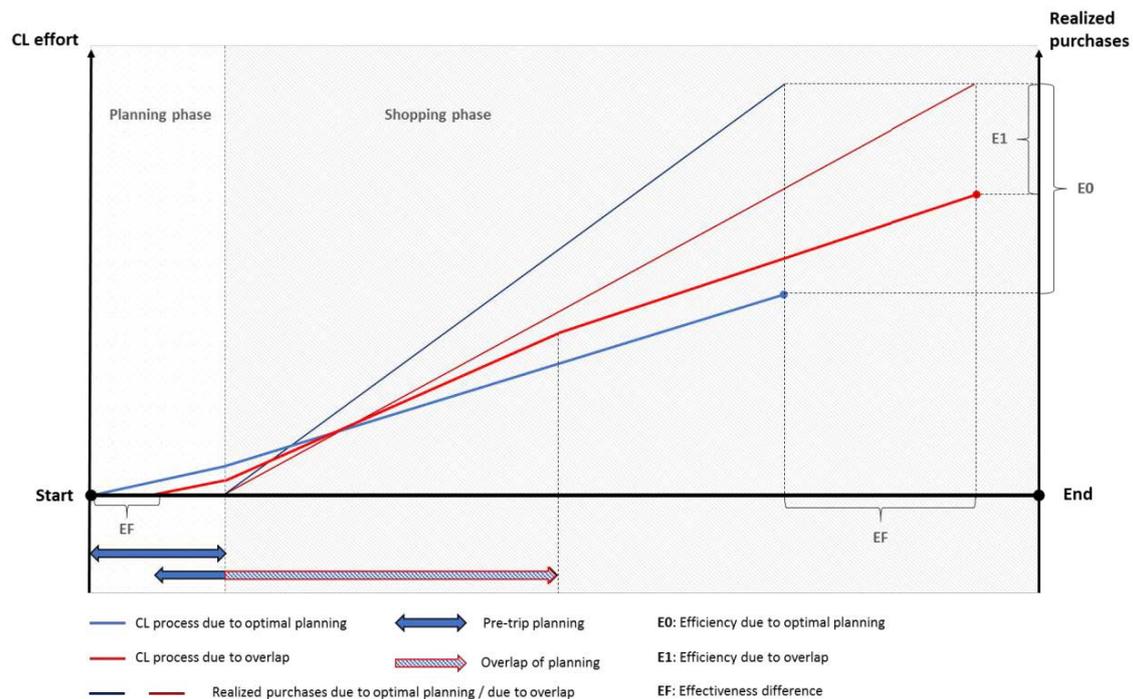


Figure 5-3: A Descriptive Process Model of Consumer Logistics

As mentioned in Chapter 2, a CL system might be efficient, if the value of outputs favors the value of invested resources, while effectiveness conditions a fast and direct accomplishment in the time taken. Compared to this process model, efficiency can be interpreted as the distance between undertaken effort (invested resources) and realized purchases (output). The greater the distance E , the more efficient CL becomes. Effectiveness can be derived from the duration of the CL process compared to a benchmark (CL_0). CL_1 is less effective than CL_0 , because CL_1 accomplishes the order with more time than CL_0 . The planning phase of CL_1 is shorter compared to CL_0 , but the other temporal difference (EF) of the operation is greater, as CL_0 spends more time in the operation phase, than compared to CL_1 in the planning phase.

The derived process model describes the household's engagement in CL, by comparing two CL processes. While CL_1 represents the CL process of the four investigated households, CL_0 is fictional, as it represents an optimal CL process. The benchmarking of CL_1 to CL_0 grants insights into how efficiency and effectiveness occur in the studied social phenomenon and leads to the proposition:

- **P1: The overlap of CL planning and CL operation determine CL efficiency and effectiveness.**

5.3 A Prescribing of Consumer Logistics

What should the CL system look like to be efficient and effective? According to proposition 1, the overlap of planning into operation has to be reduced to make CL more efficient and effective. In this regard, the order has to be planned completely, before the operation phase starts. However, it cannot be assumed that consumers are able to plan exactly, nor are they able to avoid associations and related consideration of further needs during shopping. Nevertheless, if consumers plan more exactly before the shopping trip starts, then the CL effort would be reduced and efficiency and effectiveness would be increased.

The investigations of the households mainly focused on the operation shopping. The planning phase was only examined *ex post*, as households were interviewed in accordance to their conducted planning activities. However, the observations identified planning activities during shopping, whereby participants considered further needs and made decisions and activities in order to satisfy these (overlap). The comparison of the four individual shopping trips identified groups of factors (influencing variables), which affect CL planning and operation (Dimensions A-H).

How do these factors influence the CL process, and especially the overlap? The “Inter-related factors” refer to the household’s engagement in events. Consumers participate in events and establish events. According to this, the consumer prepares an order with needed items. The overlap is reduced, if the consumer considers all relevant events and captures the related needs in an order before the shopping trip starts. If not, planning in relation to events is conducted in the operation, and the overlap is extended. For example, in household II had planned the event barbecue, whereby all household members were going to participate. The household manager “Marie”, who was responsible for the procurement of products, had to consider the wants of her partner as well. So to make the order complete, she had to communicate with her partner, and planning depended on information gathering. The same holds for “Intra-related factors”. These factors refer to communication and arrangement of needs between the household members.

So, to make planning more easy, asymmetry of information between household members has to be avoided, and information flows have to be more transparent. The third group of factors were the dwelling's structure, which places conditions on needed items. If the consumer assesses, the condition of the products in terms of the number of units, package-size, weight, best-before-data, etc., before shopping, the overlap is reduced. This assessment depends on the intensity of how inventory management is conducted by the household. The fourth influencing variable is represented by the structure of the supplier. The consumer’s

knowledge and experience of the supply, store layout, offers, etc. determine the expectations of realizing the order at the store. If there exists information asymmetry¹¹, and the consumer's expectations to get the needed products in the right conditions are not kept, the consumer has to plan and reschedule the activities during shopping, and the overlap becomes extended. The following proposition can be derived:

- **P2: Information asymmetry between consumers and suppliers leads to an overlap of CL planning and CL operation.**

Figure 5-4 shows information flows and possible “docking points” for initial solutions in regard to order processing. Each household member gathers information in accordance to events, inventory, and supply of stores. The consideration of household needs occurs by the exchange of information between the household members, as they communicate and arrange their needs. The needs result in an order, which captures concrete products, as well as the expectation to realize the purchase at chosen stores. The order becomes accomplished, when the consumer starts shopping.

RELATED INFORMATION FLOWS DUE TO ORDER PROCESSING

Figure 5-4

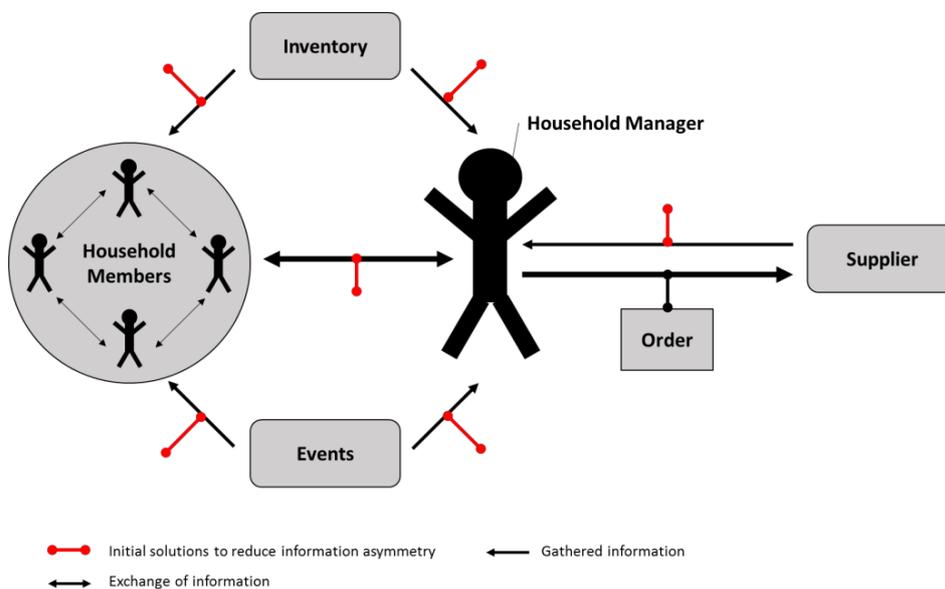


Figure 5-4: Related Information Flows due to Order Processing

¹¹ Information asymmetry: Here, it means that the involved parties might have different information, because of missing communication, and/or one party might have superior/inferior information compared to another. However, information asymmetry doesn't mean that one party would take advantage of this situation.

Due to the scale and scope of this study, initial solutions to avoid information asymmetry were briefly concluded. Beginning with the supplier's perspective, the offered supply has to be effectively communicated to the consumer to ensure that consumers develop appropriate expectations in regard to the store's supply. Second, the supplier has to guarantee that expectations can be fulfilled, by e.g. providing the right quantities, in the right conditions, at the right place, and within the right time. This may include the avoidance of out-of-stock situation by management initiatives such as Efficient Consumer Response (ECR) (see e.g. Corsten and Gruen 2003; ECR Europe and Roland Berger Strategy Consulting 2003). Third, the supplier has to provide a store layout that minimizes the shopping effort of the consumer, e.g. by applying Category Management (see e.g. ECR Europe 1996; ECR Europe 2000).

From the household's perspective information asymmetry can arise because of lacking inventory management, lacking communication, and lacking consideration of relevant events, and probably due to additional factors. Nevertheless, the participated households stated all that they were all satisfied in regard to their conducted shopping trips, as they could procure all needed items with an appropriate effort. In continuation, it can be assumed that households are not willing to invest further planning effort. So information asymmetry within households has to be reduced by making information exchanges and gathering more information effectively. Initial solutions might then include planning-tools, which are used by the households to make information-flows more transparent.

6 Summary and Conclusions

This study presented Consumer Logistics from a new perspective. While preliminary studies addressed CL deductively, this study proceeded inductively, as consumers participated and were interacted with in the field. The research field was represented by the household's engagement in CL by conducting grocery shopping. So the focus on CL was narrowed to the distribution of FMCGs. The Field research investigated four different types of household by their planning and operation of shopping for groceries. Each case offered insights in regards to one individually conducted shopping trip.

The research objective was to establish new theory and hypotheses that describe CL in more detail, or to verify and expand existing theory on CL. In order to address CL effectively, a Grounded Approach method was developed inspired by findings from the literature review. In regard to these insights, Grounded Theory, in the context of ethnography (participant observation), was used as a basis to develop the methodology. The research design was established according to the Grounded Approach and guided by the research question (see Chapter 1).

The investigations offered several insights into the four individually conducted shopping trips. The insights were captured in category schemes that covered observed and identified conspicuous activities, decisions, behavior, etc. that characterize the household's engagement in CL. A comparison between the investigations led to influencing variables, which are interpreted as generic. Based on their influence on CL planning and CL operation, eight dimensions were considered to explain CL in more detail, and to derive assumptions that constitute a new conceptual model of CL. The suggested model was further used to describe CL performance in terms of efficiency and effectiveness. Prescriptions on CL followed and illustrated initial solutions that might optimize CL in general.

6.1 Contributions to Consumer Logistics

As logistics refers to the temporally and spatially transformation (not qualitatively) of goods (Pfohl 1996, p.12), the investigations identified several logistic activities and decisions the households conducted in order to realize their needs. CL tasks can be distinguished between planning and operation, as the households wrote shopping lists, scheduled the trip, and thereafter started their trips. Proposed CL functions from Granzin (1990) could be attributed to the four investigated households, as categories resampled these functions. However, a general contribution to how logistics activities and decisions are sequenced could not be realized. Because households are individual and therefore have individual needs, individual structures, and individual daily routines, shopping and related CL tasks are conducted habitually and individually as well. This fact also holds for the household's consumption goals, which result in an order. The way and how this order is accomplished depends on the

one hand on the household's CL planning, and on the other hand, on personal modality, which determines the household manager's willingness to utilize resources.

The most crucial insight from the investigations is that consumers obviously conduct logistical planning activities during shopping. This insight was highlighted by comparing the four different shopping trips. This insight led to the contribution that CL planning overlaps CL operation. Whenever relevant needs are not considered in the planning phase, the order becomes incomplete, and the consumer is engaged in further planning activities during operation. This phenomenon was named "overlap". The consideration of variables that influence the CL process gained further insights into how activities and decisions interrelate. However, it could be concluded that these variables were generic to grocery shopping and offered the basis to derive the following assumptions:

- A1:** The planning phase is shorter than the operational phase.
- A2:** The effort invested in CL planning is less intensive than the effort invested in CL operation.
- A3:** When the planning phase overlaps into the operational phase, planning is conducted during shopping to complete the order and therefore the order is expanded.
- A4:** CL planning is extended and lengthens the shopping process, and therefore the operational phase, unless the order is pre-planned precisely.
- A5:** The overlap of planning and operations extends the CL process, as purchases are realized less quickly.
- A6:** The effort of the CL operation becomes more intensive, while CL planning is conducted in the operation phase.

The assumptions were captured in the descriptive process model. In relation to the peculiarity of the overlap, the suggested Consumer Logistics model can be used to describe how efficiency and effectiveness, as far as the first proposition holds:

- P1: The overlap of CL planning and CL operation determine CL efficiency and effectiveness.**

Further contributions to the influencing variables explained how the overlap might occur. Therefore, the contribution becomes that the extension of the planning phase into the operational phase is conditional on information asymmetry. Based on that, CL efficiency and

effectiveness can be increased, if the information asymmetry is reduced, as long as the second proposition holds:

P2: The information asymmetry between consumers and suppliers leads to an overlap of CL planning and CL operation.

Although the characteristic of groceries in regard to buying behavior emphasize a low involvement of consumers, which condition an “easy” purchase decision, these characteristics might be responsible for the undertaken CL effort. While the purchase decisions require a low need of information, CL on the other hand needs a lot of information in order to be conducted efficiently and effectively.

6.2 Limitations and Implications for further research

This study has described and prescribed CL to a certain degree. Nevertheless, this study has limitations in several aspects.

First, the sample size is restrictive, as only four households and four shopping trips represent the investigated social phenomenon. Because the households differed in regard to their structures and at least to their purchasing types, the sample offered quite a wide range of grocery shopping and its related activities and decisions. Despite these limitations, several aspects of CL activities and decisions were discovered and examined.

Second, the individual shopping trips were captured in categories. Initial coding captured content due to the household’s engagement in CL in terms of conspicuous activities, decisions, statements, etc. the participated consumer made. Codes were then classified to categories. During further procedures, these categories were aggregated into core categories, whenever saturation had been reached. Because, saturation of categories was evaluated subjectively, and intercoder-consistency matrixes were not considered due to the scale and scope of this study, it has to be acknowledged that the classified categories might lack saturation.

Third, it is clear that consumers invest effort into CL, as they plan and accomplish their shopping needs. In regard to the insights from the investigated households, this study interpreted and assumed CL planning was less strenuous than CL operation. However, it is still unclear how to operationalize effort, and therefore how to compare shopping related effort with planning effort.

Forth, the comparison of the four investigated households identified commonalities and differences. Conspicuities that influenced the individual processes were grouped into “influencing variables”. It was assumed that these influencing variables were generic by their

appearance. Because of the restricted sample size, and the fact that the investigations only cover a moment of CL, it becomes probable that further factors and variables were not identified.

Fifth, the constructed process model of CL illustrated CL processes in relation to effort, time and realized purchases. In order to keep the model simple, a linear correlation between these dimensions was assumed. While it is obvious that time and effort increases as more products are purchased, and as the consumer has to pick more items, it cannot be accurately determined if the increase in effort and time is proportional. Only the related effect can be determined.

The proposed CL model is strongly dependent on subjective interpretations. Although this study was applied transparently, further research on CL should repeat the applied research procedure to verify and identify further categories and variables. Intercoder-consistency matrixes would reduce the problem of subjectivity. Bigger sample sizes would present a more comprehensive understanding of the household's engagement in CL.

CL effort was determined as an important dimension to explain how efficiency and effectiveness interrelate in regard to time and realized purchases. The distinction between planning and shopping effort resulted in the assumption that planning is less costly than operation. However, effort was interpreted as utilized resources by the consumer during the conducting of CL. Further research should draw on CL effort to determine its function in regard to CL activities and decisions. While this study focused on FMCGs, research into other types of consumer goods might provide additional insights into CL.

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Appendix

All documents of the Appendix can be found on the attached disc.

Table of Contents

Observation protocol of household I

Pre-trip interview transcript of household I

Post-trip interview transcript of household I

Coding results of household II

Observation protocol of household II

Pre-trip interview transcript of household II

Post-trip interview transcript of household II

Coding results of household II

Observation protocol of household III

Pre-trip interview transcript of household III

Post-trip interview transcript of household III

Coding results of household III

Observation protocol of household IV

Pre-trip interview transcript of household IV

Post-trip interview transcript of household IV

Coding results of household IV

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