Abstract

This methodological and concept paper reviews the role and complexity of the recently emerged yet already well-established value-based cognitive model – Means-end Chain (MEC). The paper compares the most commonly used approaches to MEC. It examines the compatibility of available models with the theory behind MEC, reveal the conceptual gaps and outlines opportunities for future research. Leading papers, books and publications on MEC address either technical aspects of the theory or the interaction of MEC and values. The present paper paves the way for understanding the MEC from a novel, motivational perspective by integrating micro- and macro-levels into the theory.

The theoretical framework is based on a critical view of the scientific literature and includes the identification of methodologies focusing on laddering techniques, statistical methods and programmes to plot Hierarchical Value Maps. Particular attention is paid to extended MEC models intersecting with value instruments (RVS, LOV), lifestyle approaches (AIOs, RISC, CCA, FRL, etc.), dual process models (the Elaboration Likelihood Model and the Heuristic-systematic Model) and the Theory of Planned Behaviour. These are used to outline the prospects prevailing in modern marketing and consumer research.

The results of the investigation point to opportunities for enlarging the latitude of MEC by integrating micro and macro elements to enhance the model with symbolism, dynamics and multi-dimensionality.

**Keywords:** consumer behaviour, Means-end Chain Theory, self-concept, Behavioural Perspective Model.

**JEL Classification:** M30, M31, M37.

Elena Borgardt, Cracow University of Economics, Doctoral Studies, Rakowicka 27, 31-510 Kraków, e-mail: borgardt.elena@gmail.com
1. Review of Conventional Means-end Chain Theory

1.1. Theoretical Background and Conceptual Framework

The “Means-end Chain Approach” is an idiosyncratic umbrella term that comprises a myriad of qualitative and quantitative methods to elicit deep, underlying consumer values at different levels of abstraction (Olson & Reynolds 2001).

While there is a good deal of theoretical and empirical literature on this approach, the knowledge is scattered across journals and books and rather fragmented. To draw it together, this paper presents an aggregated overview of conceptual and methodological frameworks in conventional MEC and outlines the most promising scenarios for future research. The paper also sketches the possibility of enlarging the epistemological status of MEC from the purely cognitive view prevailing in the science today to a more motivational research approach that deals with situational and impetus constructed meanings. Lastly, because MEC can form synergies, the paper provides a deep dive on combinations with existing and potential models to validate their efficacy and subsequent integration into the new metatheory.

The Means-end Chain Theory is a value-based, cognitive model used to better understand consumer behaviour and decision-making. It connects the tangible attributes of a product (the means) to highly abstract and intangible personal and emotional values (the ends) (Olson & Reynolds 2001).

G. A. Kelly (1955) first proposed categorising incoming stimuli into a set of hierarchically organised categories (Grunert & Bech-Larsen 2005). He claimed that the most abstract categories motivate behaviour while more concrete ones correspond to behavioural alternatives (Ferran & Grunert 2007). Kelly’s work has contributed to the development of the Means-end Approach, introduced by T. Reynolds and J. Gutman, into the field of marketing and consumer research. The scientists posit the existence of a consumer-product relationship, which is organised hierarchically, connecting product attributes (A), consequences (C) and individual values (V) (Chin-Feng, Hsien-Tang & Chen-Su 2016). The A-C-V ladder chain provides an understanding of the salient factors and their personal importance to consumers as they make decisions.

This model can be illustrated as one with three levels of abstraction (attribute–consequence–value); four levels (attribute–functional consequence–psychological consequence–value) (Kaciak & Cullen 2009) or six levels (including concrete and abstract attributes, functional and psychological consequences, instrumental and terminal values) (Olson & Reynolds 2001).

The Hierarchical Value Map (HVM), also called the Consumer Decision Map (CDM), in form of a tree diagram is the product of data analysis, which portrays
an easy-to-interpret, most common means-end chains elicited by consumers (Olson & Reynolds 2001).

Thanks to the wide range of benefits the Means-end Chain Theory offers, it has gained in popularity in numerous fields: marketing, with a focus on MECCAS advertising strategies (Means-end Conceptualisation of the Components of Advertising Strategy) (Søndergaard 2005, Bech-Larsen 2000), brand equity analysis (Wansink 2007), consumer involvement (Lind 2007), politics (Bagozzi 2000, Phillips, Reynolds & Reynolds 2010), e-banking (Kuisma, Laukkanen & Hiltunen 2007) and social networking (Aschmoneit & Heitmann 2002).

1.2. Methodological Frameworks

A technique called laddering – forcing consumers to “move up the ladder of abstraction” (Sagan 2005) – facilitates the understanding of consumers’ end states. Laddering is a semi-structured, qualitative, in-depth, individual, face-to-face interview that reveals the means-end chains of attributes, consequences and values regarding the object(s) under study.

The means-end chains is a sequential process that can be assessed in three steps: identification of the salient product attributes, the laddering procedure and analysis of the data and plotting of the HVM.

Salient product attributes that are important for consumers can be identified using techniques based on sorting procedures, elicitation, ranking or scaling tasks. These techniques originate from cultural domain taxonomies and aim to distinguish objects according to their perceived similarities or differences (Olson & Reynolds 2001, Bernard 2011):

– sorting procedures categorise objects according to their perceived similarities or dissimilarities. Examples include triadic sorting (Kelly 1955), free pile sorting, hierarchical dichotomisation,

– free elicitation or preference–consumption difference devices are used as elicitation techniques to identify the perceived, self-relevant attributes between the objects under study as a first step; and afterwards to substantiate the most preferable option,

– ranking or scaling – respondents are asked to rate and justify their preferences.

The laddering interview identifies why particular attributes are important to the consumer in a projected situation, once the most important, salient attributes have been determined.

Laddering techniques can be soft or hard. Soft laddering is applied in research with an exploratory character (Doing Social… 2008) and has a qualitative appeal. Consumers are prompted to answer a series of probing questions which help
researchers understand why given attributes are relevant to the consumers in terms of their benefits and drawbacks.

The natural flow of the consumer’s speech, the remote influence of the interviewer on the respondent, exploration of more objects simultaneously, generation of more MECs of higher abstraction are a few distinctive features of soft laddering (Costa, Dekker & Jongen 2004).

However, soft laddering is also time-consuming, complicated to administer, costly to implement, and of limited external validity, which could lead to difficulties in encoding information.

Hard laddering was created to address the shortcomings of soft laddering. It is a more structured, more mechanistic interview model that asks consumers to generate associations. It provides less biased and more comprehensive data with high external validity. It can also be anonymous, is easier to conduct, less costly and can be applied to a larger sample of consumers (Olson & Reynolds 2001). Hard laddering can be done in several ways:

– semi-structured interview (also called paper-and-pencil) is a self-administered questionnaire that “forks” A-C-V attributes to enable data collection (van Rekom & Wierenga 2007, Leppard, Russel & Cox 2004, Henneberg et al. 2009);

– card sorting techniques (Roehrich & Valette-Florence 1991, Valette-Florence & Rapacchi 1990) select the most important attributes in cards divided into three piles: attributes, consequences and values. The procedure is repeated with the second and third most important attributes (Olson & Reynolds 2001, Ferran & Grunert 2007);

– association pattern technique (APT), proposed by T. Hofstede et al. (1998), is frequently employed in the analysis. The respondents are presented two matrices: attributes-consequences and values-consequences. In both, cells are marked with perceivable associations (Olson & Reynolds 2001, Langbroek & Beuckelaer 2007, Barrena & Sánchez 2009);

– free recall, inspired by Grey Benefit Chain Approach (Young & Feigin 1975), this approach connects physical traits of a product with “emotional payoffs” (Business-to-business… 2012);

– E. Kaciak, C.W. Cullen and A. Sagan investigated the quality of ladders generated by abbreviated hard laddering, via \( p \times (1 + k + k \times m) \) format. The model provides results with the help of much shorter questionnaires (Kaciak & Cullen 2009, Kaciak, Cullen & Sagan 2010);

– verbalised rating scales, proposed by Vanden Abeele (1990), rate the chain fit to the product in question.

Despite the benefits and drawbacks of soft and hard laddering techniques, the results from scientific studies show convergent validity of both approaches (Langbroek & Beuckelaer 2007, Costa, Dekker & Jongen 2004).
The analysis of collected data encompasses a large number of conventional and modern methods which facilitate the interpretation of results originating from laddering.

Hierarchical Value Maps are an easy-to-interpret, graphical presentation of laddering interviews in the form of a tree diagramme (Olson & Reynolds 2001). It is constructed based on a summary implication matrix or SIM of aggregated individual ladders (Kaciak 2011, Olson & Reynolds 2001).

The following multivariate methods are among the frequently used statistical methods (Baker 2003):

– factor analysis diminishes numerous attributes to a few interpretable independent factors. The method is used to explore and summarise information (e.g. market segmentation, analysis of product/service attributes, determine consumer behaviour and attitudes) (Bagozzi 2000);

– cluster analysis identifies “similar” attributes, consequences and values from a given set of characteristics (Proceedings… 2015, Myrda 2016);

– multidimensional scaling focuses on Correspondence and Conjoint Analysis and is used to represent the A-C and C-V relationships among the attributes (Possel 2010).

Regression, a multiple regression tool, investigates the nature (and strength) of relationships that exist between two or more variables (A, C and V) (Grunert & Bech-Larsen 2005, Bagozzi 2000).

Structural Equation Model (SEM) is a new, comprehensive method used to analyse MEC data (Mazzocchi 2010). SEM employs factor analysis to assess latent constructs (Brunsø, Scholderer & Grunert 2004, Sagan 2005), path analysis to establish causal models and multivariate regression or simultaneous equation systems.

Social Network Analysis (SNA) analyses ACV chains as semantic networks, where means-end relations tend to be symmetrical (van Rekom & Wierenga 2007).

To explain product preference or product perception in line with MEC Theory, Cognitive Differentiation Analysis was also examined. The results have demonstrated that preference tasks trigger more abstract sections of the MEC, whereas perceptual tasks seem to stimulate more concrete sections (Olson & Reynolds 2001).

Mecanalyst Plus and Laddermap are the most frequently used software to plot HVMs.

As MEC Theory is a useful framework for understanding consumer behaviour and decision-making, it is applied widely in numerous fields including advertising, analysis of brand equity and consumer involvement. In spite of their disparate advantages and disadvantages, both hard and soft laddering yield comparable results, allowing the investigator to determine the most suitable technique for their
research. Given the complexity of MEC research, using a combination of statistical methods is advisable (Olson & Reynolds 2001).

2. Extended Versions of Means-end Chain Theory – A General Overview

The Means-end Chain Theory is an innovative model used to explain and predict consumer behaviour. However, increased acceptance and application of the approach will depend on how its shortcomings are addressed and the improvements that will be made.

The overview below examines how MEC Theory can be combined with existing and potential models to validate their advantages and disadvantages, reveal the conceptual gaps that remain and outline opportunities for the formulation of future metatheory.

Figure 1 presents the logical flow of theories and models sorted from micro- (endogenous) to macro-levels (exogenous) with a connection to the MEC.

![Extended Means-end Chain (EMEC) Theory Opportunities](image)
The self-concept approach is considered the initial standpoint of all models. It deals with values at the level of the individual personality’s. The Behavioural Perspective Model (BPM) denotes the final, most complex level, comprising situational, learning history, reinforcement variables. Both the self-concept and the BPM models are directly connected with MEC.

Intermediate models (e.g., Lifestyle approaches, Attribute-benefit-emotions (ABE) Model, Dual-process Models – ELM and HSM) are “in-between” tools, serving as a bridge and/or filling out the new Extended Means-end Chain approach.

**MEC and Value Instruments**

The centre of the models is values. Both Rokeach Value Survey (RVS) (Rokeach 1973) and List of Values (LOV) (Kahle et al. 1983) are designed to provide insights into a global value system by bridging them with consumers’ attitudes, beliefs, preferences and behaviours.

Both RVS/LOV and MEC deal with values. Yet RVS and LOV are more lean value notions (with vague formulations, the absence of motivational aspects in the models and the lack of links between product attributes and consequences), whereas MEC has a broader consumer behaviour implication. Hence, RVS/LOV could be considered an integral part of the MEC only (Haws, Netemeyer & Bearden 2011, Olson & Reynolds 2001).

**MEC and Lifestyle Approaches**

The majority of lifestyle approaches deals with purely operational definitions, gauging lifestyle by activities, interests and ways of spending time. Activities, Interests and Opinions (AIOs), Research Institute on Social Change (RISC) and Centre de Communication Avancé (CCA) are a few examples of popular commercial segmentation instruments, which have been criticised in the scientific realm.

Yet sometimes lifestyles are attached to attitudes and values to describe consumers in terms of their consumption patterns. The instrument Food-related Lifestyle (FRL) is one of them, developed by K. Brunsø and K. G. Grunert (1995, 1998), and is a representation of the hierarchical cognitive-structure framework, based on the MEC Theory (Solomon et al. 2008).

J. Scholderer, K. Brunsø, and K. G. Grunert (2002) in their publication Means-end Theory of Lifestyle – A Replication in the UK describe an innovative tool/dual-process model, combining a List of Values (Kahle et al. 1983), Food-related Lifestyle instrument and Food-related Behaviour List (FR-BEH). In the model, abstract personal values are positioned on the top of the hierarchy while the perception of the product is placed at the bottom; lifestyle is described as an intervening system of cognitive structures that links situation-specific product perceptions to increasingly abstract cognitive categories and, finally, to personal values.
Elena Borgardt

The model extends the conceptual understanding of the MEC, where bottom-end consideration interprets the approach from the point of view of semantics; motivational aspects dominate, if the approach is considered from a top-end perspective. Apart from that, the mental representation of a product (consumption goal), bridged with behavioural aspects, enables better prediction of goal-directed behaviour. Finally, Food-related Lifestyle is proven to be an exogenous construct, mediating the relationship between values and behaviour (Scholderer, Brunsø & Grunert 2002, Del Giudice et al. 2016).

MEC and Dual-process Models

The Elaboration Likelihood Model (ELM) (Petty & Cacioppo 1986) and Heuristic-systematic Model (HSM) (Chaiken 1980, 1987) are dual process, heuristic models, explaining social information processing through different ways of processing the stimuli (Uleman & Bargh 1989).

The HSM establishes the links between the properties of the data, the individual's motives, and information processing strategies, assuming that social perceivers strive for a balance between effort minimisation and achieving confidence in the social judgments. The “heuristic” approach is considered a relatively effortless, top-down process, whereas “systematic” information processing is a more demanding, bottom-up mode (Bohner, Moskovitz & Chaiken 1995).

The ELM focuses on different persuasion processes that can operate in different situations (Social Psychology... 2003) and divides the stimuli into two routes: a central one which involves a cognitive level of information elaboration; and a peripheral route encompassing the affective aspect of information processing (Berry 2006).

Both the ELM and the HSM recognise that persuasion is accomplished via two different routes; and that motivational factors and cognitive factors have the potential to influence the individual (Social Psychology... 2003).

Yet, whereas the ELM emphasises the subjective nature of one’s assessment, the HSM tends to objectivity. Apart from that, while the ELM envisages the predominance of central route processing over peripheral at high levels of motivation, the HSM permits the combination of heuristic and systematic processing across dissimilar levels of motivation (Cooper, Blackman & Keller 2016).

T. Bech-Larsen undertook to merge the Elaboration Likelihood Advertising Model (ELAM) and Means-end Conceptualisation of the Components of Advertising Strategy (MECCAS) to define the relationships between MEC and ELM.

The results of the investigation demonstrated:

– that information processing, where an individual is personally involved in the message object, lead to stronger and more persistent attitudes than peripheral processing;
that advertising messages that created a cognitive association between the product and the personal values improved the recall and persuasiveness of the message;

- that a change in attitude enhances the prediction of behavioural intention and decision-making.

Hence, the findings represent valuable inputs for developing a unique product positioning/advertising message to provide a competitive advantage in the marketplace and connect current MEC Theory with output character (Bech-Larsen 2000).

**MEC and the Theory of Planned Behaviour**

The Theory of Planned Behaviour (TPB) (Ajzen & Fishbein 1980) is an expectancy-value model that predicts and clarifies behaviour from a social-psychological perspective and in specific contexts. Instead of focusing on a product’s utility, the theory considers the consumer’s overall behaviour.

As elaborated in the theory, the immediate antecedent of the behaviour in question is the behavioural intention, which is determined by the attitude towards the behaviour in which the individual evaluates the situation; subjective norm with its social influence on performance and perceived behavioural control, which determines behavioural intention.

Because the theory attempts to embed such elements as past experience (input) and anticipation of future circumstances (output) in behavioural control (Dierks 2005), it could be a useful point of comparison with the MEC, which leaves these elements out. MEC, on the other hand, is a static model based upon a broad cognitive structure and dealing with enduring motivational concerns which could be applied in a large number of situations. It does not cover aspects of input including context, perception or experience. The output parameters could likewise stand to be improved. TPB, in contrast, and in spite of its advantages, does not explicitly deal with attributes and consequences, but reduces product analysis to consumption occasions only. Hence, a combination of both theories could significantly help predict consumer behaviour and decisions (Ajzen 1991, 2017).

Attempts have been made to consider MEC Theory in combination with Action Identification Theory (Vallacher & Wegner 1987), extend it to the Attribute-benefit-emotion (A-B-E) Model of Benefit Focus in Advertising (Rossiter & Percy 1987, Olson & Reynolds 2001), reflect MEC from the point of view of ethogenic rules of behaviour (O’Shaughnessy 1985) and apply it to the analysis of consumer involvement (Claeys, Swinnen & Vanden Abeele 1995). However, these approaches will not be further elaborated in the present paper.

In a nutshell, all of the models compatible with the MEC are conceptually interesting and finding their application in marketing, consumer behaviour and
decision-making to a certain extent. Yet, not all of them can be considered equally appealing or potentially fruitful for future academic research.

To extend the latitude, reach and usefulness of MEC and enhance the model with symbolism, dynamics and multi-dimensionality, micro (endogenous) and macro (exogenous) elements should be incorporated into it.

The micro-level improvement to be made would be the integration of a Self-concept Approach, where values reflect awareness and perceptions about oneself and consequently provide an in-depth understanding of the consumer’s personality. On the macro-level, MEC could be extended by integrating environmental, reinforcing/aversive and experiential aspects.

3. Conclusions

This paper has conducted a detailed analysis of the currently dominant theoretical and empirical approaches to the Means-end Chains Theory, highlighted the benefits and shortcomings of existing extended versions of the theory, demonstrated the conceptual gaps and outlined a proposal for a new Extended Means-end Chain Metatheory.

Although MEC has proven an effective tool for predicting consumer behaviour, there are a few gaps on the micro- and macro-levels which the theory does not cover, but which could advance the model’s reach.

One micro-level improvement that could be made would be to integrate a self-concept approach, reflecting values that are central to the individual, the consumer’s personality and the perception of oneself. On the macro-level, MEC could be made more dynamic by employing a situational context, reinforcement/aversive and experiential aspects (Borgardt 2017). This means that the epistemological status of the MEC can be exposed from a purely cognitive view (conventional MEC Approach) to a more motivational tradition dealing with situational and impetus constructed meanings (new EMEC Metatheory).

Using conjoint methodology comprising a holistic and experiential approach of self-concept, the cognitively based hierarchical MEC approach and stimulus-response methods of the BPM opens new opportunities for the development of MEC Theory into a full-scaled, dynamic framework for marketing and consumer research.

Acknowledgement

The author would like to express gratitude to Professor Adam Sagan for guidance, essential comments and advice on earlier drafts of this paper.
Bibliography


Roehrich G., Valette-Florence P. (1991), A Weighted Cluster-based Analysis of Direct and Indirect Connections in Means-end Chains: An Application to Lingerie Retail, Workshop on values and lifestyle research in marketing, European Institute for Advanced Studies in Management (ELASM), Belgium.


Vanden Abeele P. (1990), A Means-end Study of Dairy Consumption Motivation, No. EC Regulation 1000/90-43ST, EC.

Tradycyjne i rozszerzone wersje teorii łańcucha środków i celów
(Streszczenie)

W artykule podjęto próbę zbadania złożoności i znaczenia opartego na modelu kognitywnym łańcucha środków i celów. Celem artykułu jest przeprowadzenie szczegółowego porównania obecnie stosowanych podejść związanych z analizą łańcucha środków i celów, zbadanie dostępnych modeli zgodnych z tą teorią, ujawnienie luk pojęciowych i przedstawienie kierunków przyszłych badań.

W większości prac na temat łańcucha środków i celów autorzy skupiają się na technicznych aspektach teorii lub interakcji łańcucha z wartościami osobowymi. Przentowane opracowanie umożliwia spojrzenie na łańcuch środków i celów z nowej perspektywy dzięki włączeniu do teorii poziomów zgodnych z tą teorią, ujawnienie luk pojęciowych i przedstawienie kierunków przyszłych badań.

Słowa kluczowe: zachowanie konsumenckie, teoria łańcucha środków i celów, koncepcja siebie, model perspektywy behawioralnej.