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Bridging Means-End Chain theory and self-concept through hybrid elicitation technique

Integracja teorii środków-celów i obrazu siebie — ujęcie hybrydowe

Abstract

This paper aims to examine the relationship between the Means-End Chain (MEC) theory and self-concept based on the Typology of Consumer Value through a hybrid elicitation technique. The contribution of this study is its sequential exploratory strategy of mixed-method design. The data were obtained from eighteen highly involved participants in Focus-Group (FG) discussions through the hybrid elicitation technique. First, a hierarchical value map is constructed using LadderUX software based on the responses. Second, a quantitative analysis with the help of RStudio software is conducted. Finally, an agglomerated matrix revealing the interconnections between self-concept and MEC is presented. The study provides evidence for a relationship between MEC and self-concept and redesigns the existing MEC approach's interpretation. This paper's originality lies in enlarging MEC theory's latitude by integrating self-concept as a micro-component. Thus, the MEC model becomes enhanced with individualism, symbolism, and experiential aspects. This approach provides a new consumer-centric perspective on existing MEC and opens new avenues for further research.

Keywords
laddering, Means-End Chain, self-concept, typology of consumer value, Zaltman Metaphor Elicitation Technique

Streszczenie

Celem artykułu jest zbadanie związku pomiędzy teorią łańcuchów środków-celów a koncepcją self opartą na typologii wartości konsumenckiej za pomocą hybrydowej techniki gromadzenia danych. W badaniu wykorzystano sekwencyjne, eksploracyjne podejście badań mieszanych. Dane uzyskano w drodze zastosowania zogniskowanego wywiadu grupowego od osiemnastu zaangażowanych użytkowników smartfonów. W pierwszym etapie wyodrębniono przy użyciu oprogramowania LadderUX hierarchiczną mapę wartości konsumenckich. W drugim etapie zebrane wyniki zostały poddane analizie ilościowej z wykorzystaniem oprogramowania RStudio. W efekcie przeprowadzonych analiz uzyskano macierz zależności między wymiarami obrazu siebie a strukturą łańcuchów środków-celów. Wyniki badania pozwalają na wskazanie zależności pomiędzy łańcuchami środków-celów a obrazem self konsumenta oraz umożliwiają rozszerzenie dotychczasowej koncepcji środków-celów o aspekty indywidualne i symboliczne wynikające z autowizerunku konsumenta.

Słowa kluczowe
metody drabinkowe, łańcuchy środków-celów, koncepcja jaźni, typologia wartości konsumenckich, technika ZMET

JEL: M30, M31, M37

Introduction

The MEC theory is a postmodern, expectancy-value, cognitive model that facilitates a better understanding of decision-making and consumer behaviour. The theory postulates that the tangible attributes of a product (the means) are only instruments hierarchically leading to desired, high-

order personal values (the ends). Therefore, MEC is also presented as a chain consisting of product knowledge and self-knowledge (Xiao *et al*., 2017; Walker & Olsen, 1991; Boga & Weiermair, 2011; Lin & Fu, 2020), which is pursued by the conventional MEC approach. Nevertheless, nowadays, scientific publications start stressing emotional, symbolized, and motivational aspects (Fan, 2009) focal to a person's self-concept (Verplanken & Holland, 2002; Honkanen & Verplanken, 2004; Honkanen *et al*., 2006; Verplanken & Roy, 2015) behind the consumption. Thus, it is a matter of the top-down, behavioural perspective with inverse MEC framework emphasizing the self-knowledge and deep end-state goals of consumers as the initial triggers of decision-making.

Leading papers, books, and publications on MEC present the theory as a comprehensive model and address either technical aspects or the interaction of MEC and values. However, little literature evolves with respect to its latitude, where a notable gap on the micro-level is apparent. Walker and Olson (1991) were the first scientists, who attempted to establish the link between the self, as an abstract concept, and the MEC on the example of a thinking-of-you card and a wedding card. The analysis revealed that differences in the activated goals could activate very different aspects of consumers' self-schema (Walker & Olson, 1991). Nevertheless, since then, there were no more attempts to elaborate on this topic. Therefore, the primary purpose of this paper is (1) to explore the integration of self-concept, as a more concrete concept based on postmodern Typology of Consumer Value proposed by Holbrook (Holbrook, 1996; 1999), into the postmodern MEC in order to establish a new consumer-centric perspective to investigate consumer behaviour.

The paper also intends, as secondary goals, (2) to elaborate the inverse MEC framework to reveal symbolic and motivational aspects focal to a person's self-concept; and (3) to employ a sequential exploratory strategy of mixed-method design.

The investigation results demonstrate that MEC theory's latitude can be extended and interlinked with self-concept based on the Typology of Consumer Value (Holbrook, 1996; 1999) as a micro-component. Second, the inverse MEC framework is a valid approach to reveal self-knowledge and deep end-state goals. Lastly, the mixed-method approach facilitated re-systemizing the interpretation of the existing MEC approach by exploring the phenomenon through qualitative data and supporting the obtained interpretations with quantitative data.

This paper's significant contribution lies in extending the amplitude of MEC theory. In particular, by integrating multidimensional self-concept construct based on the Typology of Consumer Value proposed by Holbrook on a micro-level. Thus, bringing individualistic, identity-forming, symbolic, and experiential aspects into MEC. These results are of interest to researchers and marketers to analyze consumer behaviour, development of successful products, and advertising strategy they enable.

The paper's structure is as follows: the second section presents the theoretical background and conceptual framework of the MEC. Section three outlines the research design, methods, and data collection process. The fourth section depicts the analysis of the results. Section five presents the findings, general discussion, and delineates the limitations of the study. The last section concludes the paper and comprises future research suggestions in the MEC area. This part is a short review of the research.

Fundamentals of MEC theory

Origin and development

Consumer behaviour is one of the central topics in contemporary marketing. Enormous efforts have been made in the marketing strategy, advertising, product development, etc., to appeal to the consumers. The constantly changing environment, personal motivation, values, beliefs, and attitudes are only a few determinants influencing the consumers' decisions.

Marketing solutions that work aim to understand consumers' behaviour and meet their expectations. Several theories were formulated, substantiated, and rejected over the past century, approaching consumer behaviour from utility, psychoanalytical, cognitive, etc. perspectives. These propositions were intended to reveal the salient determinants influencing the consumer and formulate marketing strategies based on consumer responses. MEC theory, referring to the postmodern marketing approach with its multi-dimensional vision of consumers seeking personal, relevant values and experience, is a promising research realm gaining importance nowadays and requires further investigation in consumer behaviour.

The "MEC 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). It connects the tangible attributes of a product (the means) to highly abstract and intangible personal and emotional values (the ends) (Olson & Reynolds, 2001).

The MEC theory's roots go back to the early visions of consumers. Thus, MEC benefited from Maslow's Hierarchy of Needs, which postulates that human behaviour is a hierarchically organized system that strives to achieve specific needs (Maslow, 1943; 1948). MEC borrowed logical, rational, goods-dominant methods (Huotari & Hamari, 2017) of mainstream marketing by incorporating the elements of the Extended Problem Solving (EPS) and Limited Problem Solving (LPS) proposed by Howard-Sheth, and further elaborated by Engel, Kollat and Blackwell (Howard & Sheth, 1969; Engel *et al*., 1978). 'Hard' laddering elements were inspired by Grey's Benefit Chain Approach, which connects the physical traits of a product with "emotional payoffs" (Young & Feigin, 1975; Bolzani, 2018). Rokeach's Value attitude systems, designed to provide insights into a global value system, inspired the MEC by the concept of differentiating between terminal values (goals, ends) and instrumental values (means) (Rokeach, 1973; Gouldner, 1975; Bolzani, 2018). Cohen's idea that consumers organize information at various levels of abstraction ranging from a simple product to complex personal values (Cohen, 1979) influenced MEC theory as well. Needless to say, that the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) (Ajzen & Fishbein, 1980) expectancy-value models contributed to the MEC by the parsimonious linkage between the individual's self-identity or self-concept, values, motivations, and behaviour (Conner & Armitage, 1998).

All these models have the notion of means-end nature in common, yet each describes the related levels differently (Olson & Reynolds, 2001).

MEC theory

The expectancy-value theory MEC developed by T. Reynolds and J. Gutman (Olson & Reynolds, 2001) in the mid of 1970s facilitates understanding the consumer decision-making process (DMP) by establishing the consumer-product relationship. The product attributes (A), observable or perceivable characteristics of a product; consequences (C), attained benefits; and individual values (V) (Chin-Feng *et al*., 2016; Mort & Rose, 2004) are organized hierarchically.

The theory's basic postulation is that the tangible attributes of a product (the means) are only instruments leading to desired, high-order personal values (the ends). Therefore, MEC is also presented as a chain consisting of product knowledge (concrete attributes, abstract attributes, and functional consequences) and self-knowledge (psychosocial consequences, instrumental values, and terminal values) (Xiao *et al*., 2017, Walker & Olsen, 1991; Boga & Weiermair, 2011; Lin & Fu, 2020).

The up-to-date MEC approach pursues the investigation of the cognitive linkage from exactly this bottom-up perspective (Brunso *et al*., 2004). Thus, the chain starts from sub-ordinate goals (As), going through focal goals (Cs), and ending up with super-ordinate goals (Vs) (Xiao *et al*., 2017), however without linking it to a concrete self-concept notion.

In the early 1980s, Gutman (1982) introduced another conceptual model, suggesting that consumers categorize the world into smaller units to make it manageable. Hence the MEC's chain started with personal values (self), going through the consequences, and ended with attributes. However, due to methodological difficulties in implementing this approach, it was abandoned.

Notwithstanding, the emerging scientific publications underly that consumer behaviour is transforming from utilitarian to emotional, symbolized, and motivational consumption (Fan, 2009). Thus, it is worth investigating deeper the top-down (Brunso *et al*., 2004) behavioural perspective shortly introduced by Gutman (1982) with inverse MEC framework emphasizing the self-knowledge and deep end-state goals of consumers as the initial triggers of decision-making.

Conventional laddering: soft and hard approaches

Laddering is the well-established method for collecting qualitative data within MEC. Originally, laddering was a semi-structured, qualitative, in-depth, individual, face-to-face interview called 'soft' laddering. It was applied in research with the exploratory character (Breakwell, 2008), forcing consumers to "move up the ladder of abstraction" by unrestricted answering a series of probing questions. The use of the sample size of twenty, twenty-five people in total (Lin & Fu, 2018; van Rekom & Wierenga, 2007; Olson & Reynolds, 2001) warrants the validity of the research. Nevertheless, the researcher can resort to a smaller sample size if information-rich participants are interviewed (Pike, 2012), and the saturation point reached earlier than expected.

Later, the scientists created a more structured, mechanistic interview model using self-administered questionnaires, telephone, or email to generate associations. So 'hard' laddering emerged (van Rekom & Wierenga, 2007; Roehrich & Valette-Florence, 1991; Langbroek & Beuckelaer, 2007; Kaciak & Cullen, 2009; Kaciak *et al*., 2010). It proved to be easier to conduct, less costly, and

applied to a larger sample of consumers (Olson & Reynolds, 2001).

Laddering consists of three steps. First, the scientists ask consumers to identify the salient product attributes using sorting procedures, free elicitation technique, or ranking/scaling (Olson & Reynolds, 2001). At the second stage, the interviewees answer questions "why" particular attributes are important to the consumer in a projected situation to explain the relationship between the consequences and personal values. (Huber *et al*., 2004). At the last stage occurs the analysis of the data, creation of a summary implication matrix (SIM), and plotting of the Hierarchical Value Map (HVM) (Olson & Reynolds, 2001; Xiao *et al*., 2017). HVM is a tree-like network diagramme, which consists of nodes and lines (Reynolds & Gutman, 1988; Orsingher *et al*., 2011). The nodes signify As-Cs-Vs concepts; the relationships represent the frequency of linkages between them (Wilhelms *et al*., 2017; Wittmer & Riegler, 2014; Jung & Pawlowski, 2014; Kim *et al*., 2016).

In order to produce an easy-to-interpret HVM with the most relevant connections and meaningful results, a cut-off level, defined as the minimum value of the number of associations between two different concepts (Fabbrizzi *et al*., 2017; Reynolds & Gutman, 1988), to be cautiously determined (López-Mosquera & Sánchez, 2013; Cerjak *et al*., 2014). A low cut-off level results in a complex map containing a large amount of information, which is difficult to interpret. Reducing the complexity of the HVM while not losing too much data requires applying a higher cut-off level to produce a more straightforward map with fewer connections (Cerjak *et al*., 2014; Guenzi & Panzeri, 2015).

Self as the "ends" integrated into MEC

Goal-oriented MEC theory is a comprehensive model for understanding consumer behaviour and decision-making; however, there is a notable gap on the micro-level concerning amplitude. The first scientists, who endeavoured to relate the self as an abstract concept, and the postmodern MEC were Walker and Olson (1991). They underlined that different goals could activate different meaningful aspects of consumers' self-schema (Walker & Olson, 1991). However, there were no further efforts to investigate this issue from that time. Hence, we explore this link further but attaching the self as a more concrete notion based on the postmodern Typology of Consumer Value proposed by Holbrook (Holbrook, 1996; 1999).

It is hypothesized that personal values are focal to a person's self-concept (Verplanken & Holland, 2002; Honkanen & Verplanken, 2004; Honkanen *et al*., 2006; Verplanken & Roy, 2015), acquire motivational properties by making up the part of the self (Verplanken & Holland, 2002), and tightly correlated with personality and at the same time self (Hirschman & Holrbook, 1982; Walker & Olson, 1991).

However, MEC's elements stemming from cognitive anthropology, psychology, sociology, and marketing lack the link to the self-concept. Hence, a potential for improvement would be to integrate a self-concept approach, where values are essential to the individual, reflect the perceptions one has of oneself, and, consequently, provide an in-depth understanding of the consumer's personality.

Basically, various theoretical perspectives treat self-concept differently. The psychoanalytic or Freudian theory considers the "self" as a competing, conflicted system. The behavioural theory defines the "self" as a bundle of conditioned responses, while the cognitive theory characterizes the "self" as a system, processing information about the self (Solomon *et al*., 2006).

Besides that, the dispute continues as to whether the "self" is a unidimensional concept, comprising ideal, actual self, or extended self; or whether it is a multidimensional construct involving a variety of notions, thus being individualistic, identity-forming, symbolic, and experiential in nature (Blaiech *et al*., 2013).

Following E.C. Hirschman's and M.B. Holbrook's view (Hirschman & Holbrook, 1982), representatives of postmodern marketing, personality and values are tightly correlated, and in that sense:

- value is an interaction between a subject (individuum) and an object (product), and values are changeable across individuals;
- the purchase of goods by a person is not considered from a neoclassical, utilitarian perspective, but from one of experience (Sánchez-Fernández & Iniesta-Bonillo, 2007);
- the individual prefers products with images that are congruent with his or her self-concept (self--congruent products);
- the individual is directed to enhance his or her self-concept/identity through products, communicating symbolic meaning;
- personal values are comparative and situational (Holbrook, 1999).

Elaborating further on M.B. Holbrook's comprehensive typology of the consumer value approach (Holbrook, 1996; 1999), three key dimensions of consumer/personal values can be interrelated with MEC theory. The first dimension, extrinsic (consumption is appreciated for its instrumentality as means to ends relationship) versus intrinsic value (consumption experience as an end in itself). The second dimension, self-oriented (prizing of

values for a person's own sake) versus other-oriented value (consumption beyond the self to someone else) (Holbrook, 2019). Furthermore, active values (physical or mental manipulation of a product) versus reactive (an experiential impact the product has on a consumer) (Sánchez-Fernández & Iniesta-Bonillo, 2007; Holbrook, 1999; Gallarza *et al*., 2017).

Figure 1 presents the conceptual model bridging the MEC and self-concept based on the Typology of Consumer Value.

Another noticeable linkage between MEC and self-concept is symbolic meanings (i.e., visual images, metaphors, stories) (Millan & Mittal, 2017). Researchers engaged with both the self-concept and MEC underline the benefits of using the projective techniques (PTs) to examine either the self-concept or elicit in-depth personal values, thoughts, and feelings (Kim *et al*., 2012). Nevertheless, there are few studies available bringing together self-concept, MEC, and PTs (Chun-Hui *et al*., 2018).

When it comes to considering MEC in a situational context, it could be considered static and simplistic, with a fixed number of values at the end of the chain (Grunert *et al*., 1995). "Multiphrenic self" in the postmodern view is dynamic and could be driven by several differentiating goals to satisfy the personalities/identities in place (Hamouda, 2012).

Therefore, the hierarchical, cognitive, value-based MEC theory combined with the postmodern self-concept marketing approach with its multi-faceted vision of symbolism, unique meanings, and experiences is necessary to re-design and re-systemize the interpretation and understanding of consumer behaviour and decision-making process within the MEC framework (Borgardt, 2019).

Research methodology

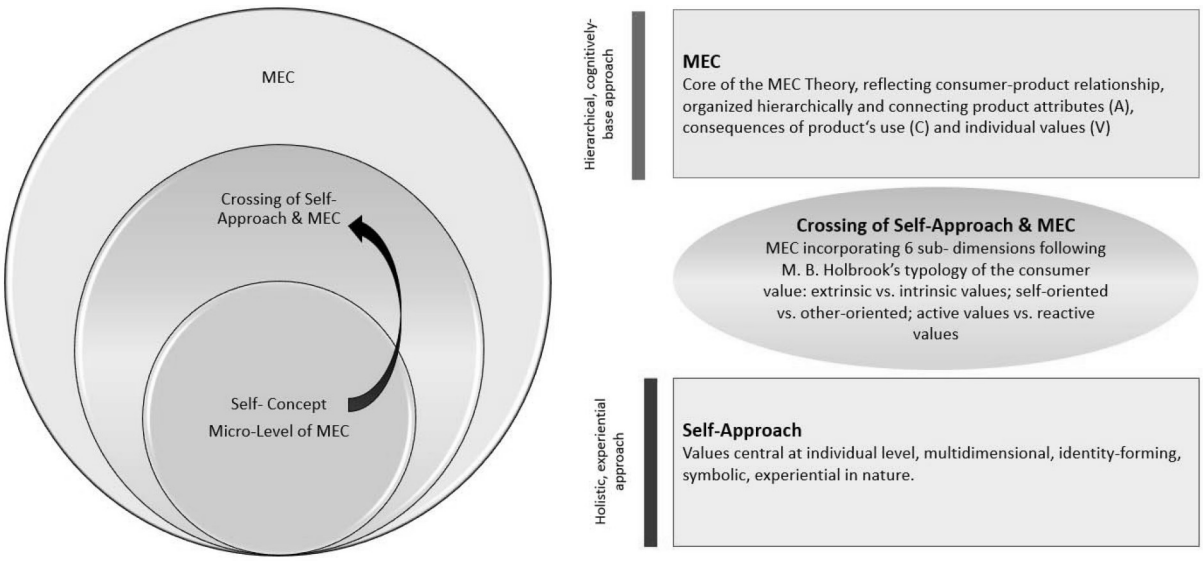
Research design and data collection instruments

As values, motivation, and cognitions are primarily dealing with latent and unconscious aspects of consumer behaviour, the investigation focuses on the mixed-method (a combination of qualitative and quantitative data collection and analysis). In this paper, we use 'soft', qualitative techniques as primary methodological design accompanied by quantitative design benefits as a complementary approach (Driscoll *et al*., 2007).

We resorted to Focus-Group (FG) format as it can best reconcile different interviewees' perspectives and generate insights that might not be produced in individual responses (Chan *et al*., 2013; Van Kleef *et al*., 2005; Guest *et al*., 2017). The group discussions were audio recorded.

The topic under investigation was "Consumer values and motivation in the usage of smartphones". This product has been selected for investigation, as it is central to most consumers' lives nowadays and comprises not only utilitarian characteristics but also an extension of personality

Figure 1. Conceptual presentation of the model: self-concept approach integrated into MEC



Source: the author.

and individuality (Grant & O'Donohoe, 2007; Sultan & Rohm, 2005; Persaud & Azhar, 2012).

Research methods

Since both self-concept and MEC deal with symbolic meanings (i.e., visual images, metaphors, stories), the research methods are built on the principles of inductive analysis, meaning analysis of the "text" units, and visual representations (Vanderstoep & Johnson, 2008). To explore these interconnections between the self-concept and MEC, we utilize the PTs.

Initially, clinical psychology applied the PTs, as using projection enables access to the unconscious mind. In more recent decades, projective methods have been employed in other research areas, including marketing (Pettigrew & Charters, 2008; Khoo-Lattimore *et al*., 2009), as they provide a greater depth of understanding into what people truly feel and think about the product (Khoo-Lattimore *et al*., 2009). PTs are often used in exploratory studies to effectively and rapidly obtain information on unreachable beliefs: attitudes, values, motivations, personality, cognition, and behaviours (Upadhyaya, 2013; Donoghue, 2000; Fram & Cibotti, 1991). Besides, PTs allow access to information that people may be reluctant to share directly (Pettigrew & Charters, 2008). One more advantage is that both qualitative and quantitative studies widely use the PTs (Boddy, 2005).

We chose the Zaltman Metaphor Elicitation Technique (ZMET®) for the current research. It is a new hybrid methodology developed and registered by Zaltman in 1995 (Zaltman, 1995; 2001). It consists of a series of steps fusing different image/picture-based PTs to explore the phenomenon under study. Because people's abstract thoughts and language are image-based, ZMET® proved to be useful in exploring the in-depth understanding of key perceptual concepts (i.e., feelings, beliefs, motivations, and attitudes) (Venkatesh *et al*., 2010; Khoo-Lattimore *et al*., 2009; Van Kleef *et al*., 2005) and the customer experience in general (Coulter, 2006).

Sample selection criteria

For the study, we utilized purposive criterion sampling. This sampling method was selected as it helped the researchers to focus on key informants, who are very knowledgeable of the issue under investigation. The participants were undergraduate students (i.e., young, mature individuals with established points of view), with cross-cultural experience (i.e., having not only domestic experience of using the devices), heavy-users of smartphones (i.e., with user experience for more than five years), and highly involved with the product under study. To recruit students to participate in the investigation, we approached the head of the department of market analysis and marketing research and head of International Program Office (IPO) from the Cracow University of Economics. The permission was granted for five hours of the class time to provide exhaustive explanations on the topic and gather the information for the research. Participation in the study was voluntary; there was no compensation provided.

The sample size was compliant with the generally accepted rules for qualitative studies using MEC analysis (Lin & Fu, 2018; van Rekom & Wierenga, 2007; Olson & Reynolds, 2001). It was conducted an explorative study with 18 respondents in May 2019 in Cracow, Poland. Table 1 illustrates the sociodemographic characteristics of this sample.

Table I. Sociodemographic characteristics of the sample

Variables		Number	%
Gender	Men	7	39
	Women	11	61
Age (years)	18–25	18	100
Nationality	Armenian	1	6
	Brazilian	1	6
	Georgian	1	6
	German	2	11
	Greek	1	6
	Italian	1	6
	Polish	7	39
	Ukranian	3	17
	Unknown	1	6
Education	University	18	100
Employment	Student	12	67
	Employed	6	33
Marital status	Married	1	6
	Single	17	94

Source: the author.

Laddering combined with PTs

We applied a semi-structured, qualitative, FG interview. The exercise resembled the 'soft' laddering interview in its classical form, where respondents were forced to "move up the ladder of abstraction". The exception was that we employed image-based techniques borrowed from the Zaltman Metaphor Elicitation Technique (ZMET®) to reveal the MEC's attributes, consequences, and values. Thus, the primary stimulating tool for self-concept and A-C-V elicitation were self-relevant

visual cues identified by the informants. The complementary instrument was classical verbal laddering.

We provided detailed explanations before and during performing the exercises and included recommendations as to how to perform the tasks.

During the research, we then divided the respondents into four groups. Each group received seven magazines with different genre-lifestyle: IT technologies, sports, entertainment, politics, films, etc. We also provided A0 Whatman (paper), scissors, stickers, soft-tip pens, and glue as supplementary materials to construct a summary image.

The steps of the exercise were as follows:

- Visual construct elicitation
  To investigate psycho-social experiences (Parkin, 2014), we invited the respondents collectively within the group to select and cut out self-relevant pictures from the magazines that represent their thoughts and fillings about motivation in the usage of smartphones.
- Constrained pile sorting task
  Then we requested the informants to categorize selected pictures into pre-defined groups following the guidelines of constrained pile sorting technique (De Munck, 2009). Pictures associated with "attributes" were encouraged to put in the first pile, images related to the "consequences" in the second pile, illustrations associated with "values" in the third pile.
- Creation of summary image/collage
  Afterward, we asked the participants to montage a summary collage by sticking each selected element on the A0 Whatman paper and labelling it. Pictures associated with "attributes" were demanded to put at the bottom of the sheet, "consequences" in the middle, and "values" at the top.
  The attributes, consequences, and values had to be logically connected, hence expressing important issues under investigation in the form of ACV. The logic of connecting the ACV chains consisted of providing productive, clear reasoning between the pictorial nodes on the collage at the storytelling stage. Before working under the task, we provided a few examples of how an ACV chain could look. For example, the chain: "Happiness › connection › apps" could be logically explained as "I feel happy when I socialize with people. However, as my family lives far away, I can connect with them only virtually, via my smartphone. Therefore, it is vital for me to have good-quality advice with messaging apps that work smoothly". During the task completion, we monitored and justified the correctness of task completion orally to ensure the consistency and accuracy of the outputs prepared by the groups.
- Storytelling
  Then, we invited the interviewees to describe how each image represents their thoughts and feelings (Coulter, 2006) about consumer values and smartphone usage motivation. The respondents had to explain the ACV linkages between the collage pictures during storytelling.
- 'Soft' laddering
  To understand important personal constructs, in case the respondents did not describe them during the storytelling phase to a full extent, we utilized laddering questions as a supplementary tool.

Each FG created one collage, meaning that we obtained four collages for analysis in total. Each of the collages was individualistic and manifold. They represented harmonious group thinking cohesiveness and common team mental models of smartphone usage.

Analysis of results

The audio recorded FG discussions were transcribed; the content analysis was conducted; the responses were classified into three basic ACV levels (Olson & Reynolds, 2001). Subsequently, with the LadderUx software's help, we constructed the implication matrix and HVM. LadderUX analysis consisted of four phases: 1) the product interaction phase, 2) the attribute elicitation phase, 3) the actual lenient laddering interview, and 4) the data analysis phase. The cut-off level best representing the HVM was two.

The outcome HVM (Figure 2) represents the following central ideas:

- Combination of the laddering and PTs is a useful method for eliciting in-depth thoughts/feelings;
- There are few concrete attributes present on the map, whereas abstract attributes prevail. Both concrete and abstract attributes are essential for the participants, as they enable higher levels of abstractions.
- The HVM demonstrates rich data on the consequence level. This observation supports the postulation that only highly involved with the product consumers can provide rich data and achieve higher abstractions levels (Huber *et al.*, 2004).
- Instrumental values are multi-faceted; whereas there are only two terminal values at the end of the ACV chain.
- Positive-loaded ladderings prevail (marked in grey), whereas negative ladders (marked in black) are also part of the HVM. Both positive and negative ladders appear on the psychosocial level.
- The situational context is of relevance for the participants. On the example "time issues" (psychosocial consequences), it is noticeable that ladders can end up with either "happiness" or "unhappiness" (terminal values level).

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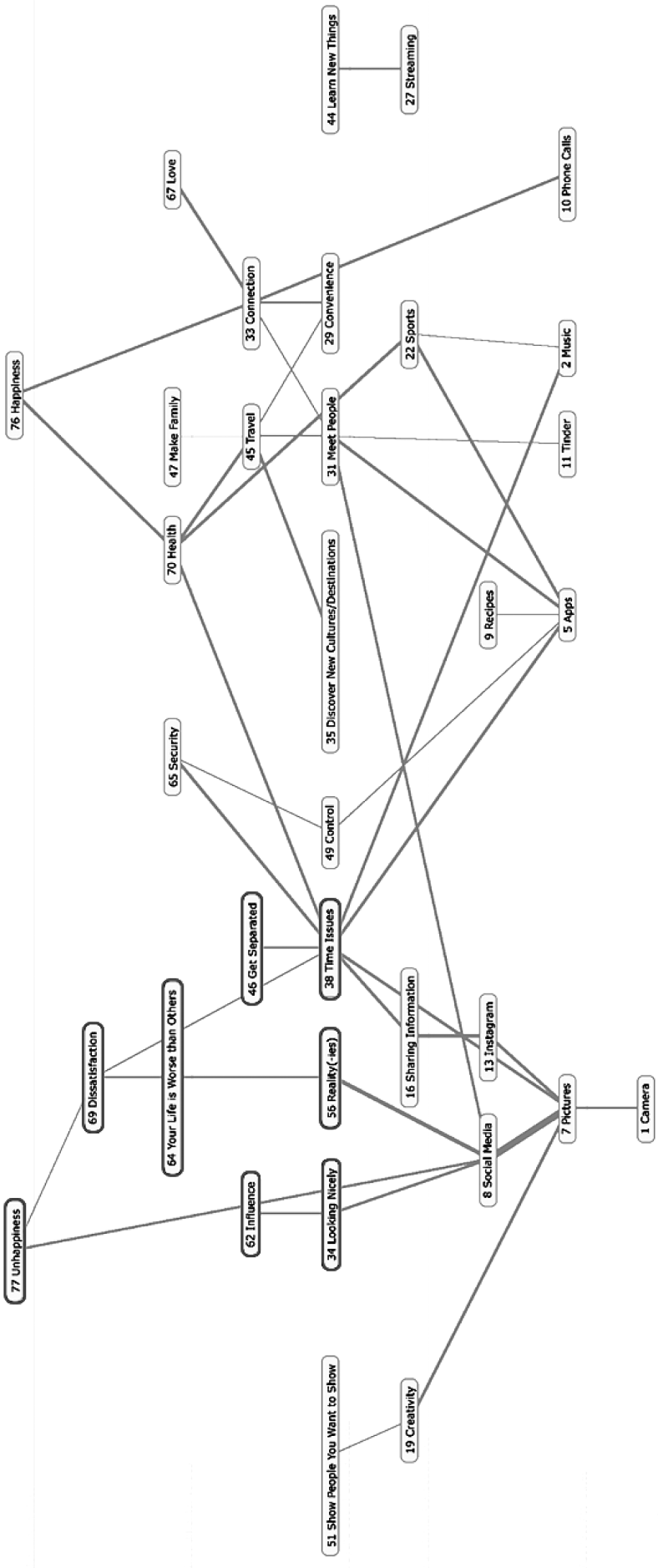
Figure 2. HVM: Laddering combined with hybrid elicitation technique



Source: the author.

To investigate the links between self-concept based on Holbrook's Typology of Consumer Value and MEC, we then conducted a quantitative analysis. We utilized the SIM of laddering as a starting point. Afterward, we complemented each of its element by MEC's dimensions (i.e., concrete attributes, abstract attributes, functional consequences, psycho-social consequences, instrumental values, and terminal values) and values from Holbrook's Typology of Consumer Value (i.e., self-oriented vs. other-oriented, intrinsic vs. extrinsic, and active vs. reactive).

As a result, a matrix emerged. The cross-section of the mentioned attributes and the dimensions was assigned with frequency values. We employed RStudio software, the Pearson correlation of the "corrplot" package with a confidence level of .95 to assess the variables' relationship (Gillespie *et al.*, 2020). The dataset contained the same units and scales; therefore, the data were not normalized (Mazzocchi, 2008). The aim of the analysis was to assess the relationship between the variables in order to estimate opportunities for combining MEC and the self-concept.

The correlation matrix (Figure 3) depicts that the main elements of MEC (i.e., attributes, consequences, and values) correlate with self-relevant values proposed by Holbrook. Positively correlated elements are grey, and negatively correlated elements are black. Colour intensity and the circle size are proportional to the correlation coefficients.

However, it is still open, where both elements' intersection occurs. For that purpose, we agglomerated the correlation matrix outcome with the conceptual model presented in Figure 1.

Figure 4 portrays the model's theoretical conceptualization on the left-hand side, whereas the outcome from the correlation matrix is on the right-hand side. Vertically, in the middle, it is proposed a re-designed MEC interpretation.

As apparent from the figure, the attributes and consequences belong to product knowledge. The concrete attributes do not depict any significant correlations, as the magazines' images were less relevant to communicate a concrete product attribute (Phillips & McQuarrie, 2009). The abstract attributes are well presented, as

Figure 3. Laddering combined with hybrid elicitation technique: correlation matrix

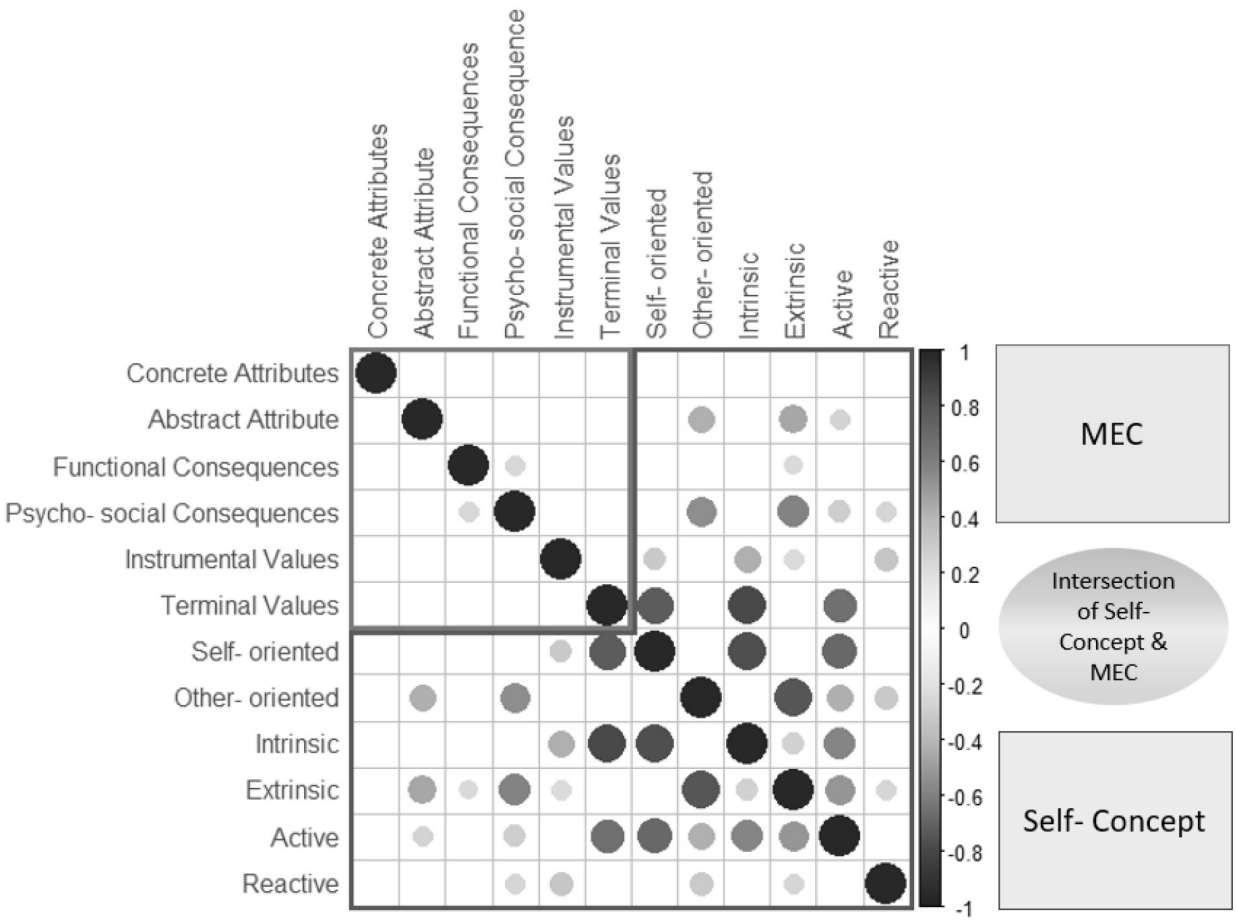


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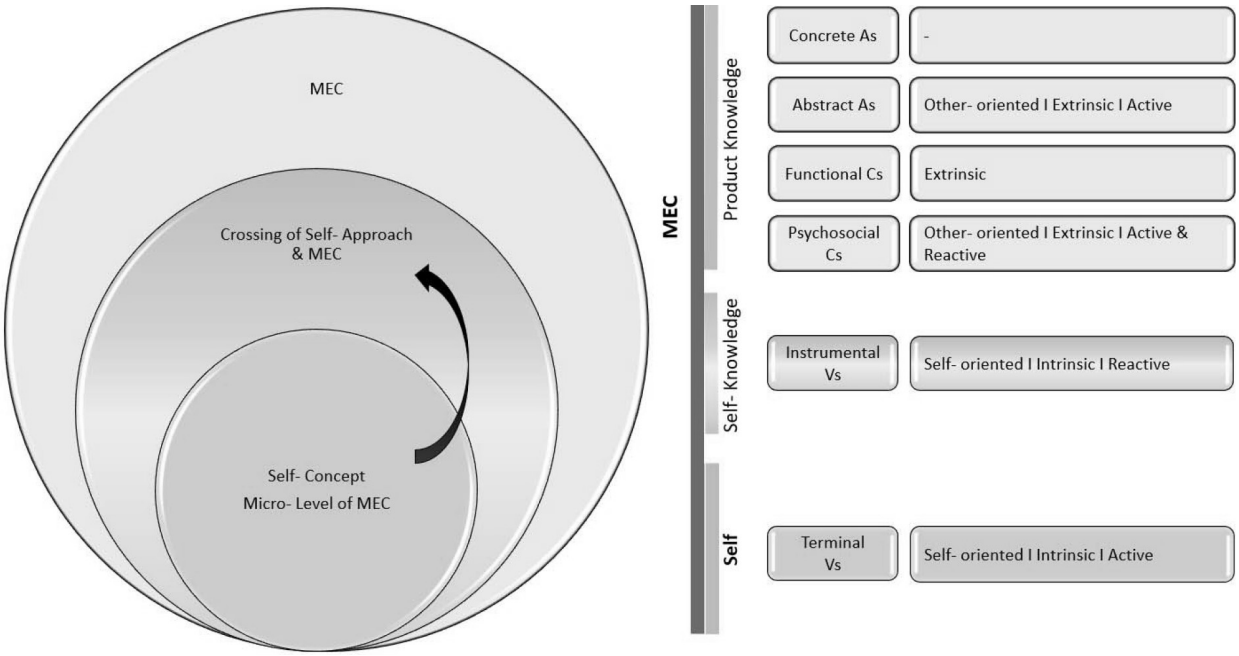
Figure 4. Self-concept approach integrated into MEC



Source: the author.

they transmitted the attitudes and/or perspectives in visual metaphors (Phillips & McQuarrie, 2009), which were more appealing to the participants.

Functional and psychosocial consequences refer to product knowledge because they represent the outcomes of consuming or using a product (Bolzani, 2018). Functional consequences illustrate significant correlations on the level of extrinsic values only. This result can be explained by instrumentality "as means to ends" associated with smartphone usage. Psychosocial values have significant correlations with other-oriented, extrinsic, active, and reactive self-concept dimensions. This outcome mirrors the insights of the HVM (Figure 2), where psychosocial consequences are well-presented and include socializing aspects beyond the self to someone else, instrumentality facets, and appreciation elements from using the product.

Instrumental values fall into the self-knowledge component, and this is the area where the intersection of MEC and self-concept elements occur, because the self-orientation and intrinsic values are predominant, though reactive in nature. Terminal values possess all characteristics of the "self", hence being self-oriented, intrinsic, and active.

Findings, general discussion and limitations

Findings and general discussion

The research results demonstrate that MEC theory's latitude can be extended and interlinked with self-concept based on the Typology of Consumer Value (Holbrook, 1996; 1999) as a micro-component. This connection becomes apparent in the quantitative part of the research. The correlation matrix portrays that self-oriented values are relevant for Vs level; other-oriented for As and Cs. Intrinsic values are also appealing for Vs level; extrinsic for As and Cs. Active values predominate over reactive values.

Second, the inverse MEC framework is a good approach to reveal self-knowledge and deep end-state goals. With the help of ZMET® image-based research methodology, which is oriented to appeal to people's abstract thoughts and language, it was possible to uncover logical scrutiny and arguments that could not be uncovered by verbal messages of conventional MEC only.

Third, the mixed-method approach facilitated re-systemizing the interpretation of the existing MEC approach by exploring the phenomenon through

qualitative data and supporting the obtained interpretations with quantitative data. As a result, the attributes and consequences were referred to as product knowledge, instrumental values fell into self-knowledge, and terminal values were treated as the core element of an individual, "self," influencing the behaviour.

When it comes to considering MEC in a situational context, the HVM findings depict that the situational and temporal aspects are of relevance for the participants. Thus, the ladder can end up with either "happiness" or "unhappiness", depending on the context.

Finally, the authors believe that the present research could only be generalized to specific product categories. The fact is that products distinguished by utilitarian attributes solely provide instrumental, functional, or practical utilities only. The "self" aspect is much less pronounced or absent. The products that are well-related to self-concept, manifested by status, sensations, or experiences from using the products, are where the investigation findings would be valuable.

Limitations

The limitations discovered are dealing with data collection, coding of information, analysis per se, and validation of results.

On the data collection level, some of the respondents were able to generate weak cognitive links only, which caused a limited amount of ACV linkages. Therefore, we would recommend attracting more participants with higher involvement with the product.

As MEC emerged as a qualitative in nature approach, there were issues connected with the coding and analyzing the data, which means that the researchers' personal view could have biased the interpretation of the information. Nevertheless, we decided not to resort to inter-rater reliability assessment, as we provided exhaustive explanations to the sample during the investigation to diminish the bias during analysis. Apart from that, the qualitative methodology was selected as a primary tool for the research, where using additional quantitative statistics to measure inter-rater reliability would be redundant.

Besides, several trials were required connected with the cut-off level to identify the HVM with the most relevant connections and meaningful results. Although the theory suggests using a higher cut-off level to have fewer connections and easier to interpret the HVM, the cut-off level is relatively low in this specific study. This artifact is explained by the collaborative nature of FG work, where prevailed a high level of agreement between the team members.

As for validation, the study comprised eighteen participants only; therefore, it would be worth enlarging the number of interviewees to replicate and/or broaden the findings.

It would also help to expand the study to other product categories to affirm our assumption about the generalizability of the findings to the product categories with the prevalent manifestation of the "self".

Conclusions

Although MEC has proven a useful tool for predicting consumer behaviour, there is a notable gap on the micro-level, which the theory does not cover but could advance the model's reach. Thus, this paper has presented the extended MEC framework by integrating multidimensional self-concept construct on a micro-level, thus bringing individualistic, identity-forming, symbolic, and experiential aspects into MEC.

The findings of this work demonstrate that, first, there is a relationship in place between MEC's elements and values from Holbrook's Typology of Consumer Value. Second, the inverse, top-down, behavioural perspective of MEC is a valid approach to reveal symbolic and motivational aspects focal to a person's self-concept. Third, the mixed-method facilitated re-systemizing the interpretation of the existing MEC approach.

Owing to the expansion of MEC theory, the paper opens new directions for theoretical and practical research involving the use of MEC in predicting consumer behaviour, developing successful products, and advertising.

Conflict of interest statement

On behalf of all authors, the corresponding authors state that there is no conflict of interest.

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Absolwentka studiów doktoranckich w Uniwersytecie Ekonomicznym w Krakowie. Zajmuje się analizą zachowań konsumentów z wykorzystaniem teorii środków-celów, a w szczególności integracją teorii MEC z modelem perspektywy behawioralnej i koncepcją obrazu siebie.

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