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A Case-Based Generalizable Theory of Consumer Collecting

Structured Abstract

Purpose
Collecting behaviour is a special type of consumption, which consists of several traits, such as "completion", "perfection", "caring" and "cooperation". The aim of this study is to shed light on this complex consumption behaviour, by effectively developing an empirical typology of collectors and explaining their motivation to engage in collecting.

Design/methodology/approach
In total, 208 questionnaires were collected among Thai collectors. A set-theoretic comparative approach was implemented—namely, fuzzy-set qualitative comparative analysis. The value of the proposed approach over conventional correlational methods, is illustrated through an examination of a set of relevant research propositions.

Findings
The study develops an empirical typology of collectors, on the basis of the various collecting behaviour traits. We suggest that different combinations of motives are sufficient for identifying collector types accurately, and the proposed typology is stable and generalizable across collectors of different demographic characteristics. Specifically, "expert professionals" are mainly driven by adventure and social motives, while the role of idea motive is crucial for "introvert focusers". Adventure and social motives are necessary conditions for "extrovert altruists", while gratification has a deleterious role. The presence of social motive is necessary for "hobbyists", while the absence of value motive is also required.

Practical implications
The brand collectible market is booming and collectibles can be a strategy for brands to maintain existing users and reinforce loyalty levels. Global brands, such as Swatch and Coca-Cola have been acquired for collection rather than typical consumption purposes. Marketers and brand managers should therefore monitor the motivation behind this complex consumption behavior. The mosaic of motives to engage in collecting behavior varies across different types of collectors, and therefore specifically tailored strategies are proposed.

Originality/value
The study tackles the lack of literature specifically focusing on collecting behavior in relation to motivation. This is the first attempt to empirically derive a collectors' typology and provide a nuanced coverage of how financial and nonfinancial (hedonic) motives and their combinations affect different collector types.

Keywords: Collecting behaviour, collector typology, motive, hedonic consumption, fuzzy-set qualitative comparative analysis

Article Classification: Research paper

1.   Introduction

Collecting is a hedonic, highly involving passionate consumption, which differs from other types of consumption because it involves the formation of what is seen to be a set of items that are removed from ordinary use (Belk et al., 1991). From a psychoanalytic perspective, Formanek (1991) reviews collecting behaviour and explains its links to Freud and later relational-model theories. From a sociological perspective, Belk (1995) looks at the social impacts of collecting behaviour on the individual collector, the collector's household, and society as a whole, while McIntosh and Schmeichel (2004) examine collecting from a social psychological perspective by identifying eight phases of collecting behaviour.

Despite the fact that collecting has been studied from different perspectives, there is limited effort to explain the reasons that motivate collectors to engage in such a behaviour, and these few efforts mainly focus on the examination of economic factors. For example, Stoller (1984) presents an account of many of the economic factors that affect the collectibles market. Indeed, it is not difficult to understand why individuals collect certain collectibles, such as vintage kitsch homeware, china sets, antique wooden chairs, vintage toys and art objects. Literature mainly suggests that such collectible items provide over the years some degree of return to the collector (see e.g., Burton & Jacobsen, 1999). However, a natural question that comes to one's mind is how we can validly explain the collecting of matchbook covers, bottle tops, or belt buckles?

The present paper attempts to shed light on the motives for collecting for both financial and nonfinancial reasons, for which very little is currently known from existing literature. To the best of our knowledge, this is the first reported attempt to develop an

empirical typology of collectors and examine the synergetic effects of multiple antecedents of collecting behaviour – in particular Thai consumers' motives for engaging in different types of collecting behaviour. To achieve this, a set-theoretic comparative approach was implemented—namely, fuzzy-set qualitative comparative analysis (fsQCA). The value of the proposed approach over conventional correlational methods, is illustrated through an examination of a set of relevant research propositions.

Recently, Carey (2008) proposed that collectibles have both ordinary economic and social value to the collector. Contrary to previous literature, Carey emphasized that the social value of the good can also motivate collecting behaviour. Although financial gain motivation for collecting has received much attention in the economics literature, there is very limited effort to explain collecting motivation, in the absence or presence of financial gain. From a social psychological perspective, many individuals have a natural desire to collect things for various reasons. For example, the financial gain may be one of those reasons, while the emotional reaction of happiness in response to a fulfillment of a goal can be another, and in many cases, these reasons are not mutually exclusive.

Global brands such as Swatch, McDonald's, Oreo, and Coca-Cola have been acquired for collection rather than typical consumption purposes. For example, the Coca-Cola collectors club boasts 7,500 members in 23 countries who collect Coca-Cola memorabilia from bottles and cans, to vending machines and coolers (Slater, 2001). Similarly, for several years, collectors' desire for Swatch watches extended far beyond their functions as a way to tell time. This intense form of collecting Swatch watches is an example of a brand collectible microcosm that on the surface appears extreme, but is in many respects typical of many collectors (Long and Schiffman, 1997). The brand

collectible market is booming and companies are extending brands into lines of collectible merchandise such as Christmas ornaments, dolls, glassware, etc. From a marketing perspective, this merchandise not only heightens brand loyalty, but also extends the brand message exposure (Slater, 2001). Evidently, there are both theoretical and managerial reasons, which signal the need for further exploration of the motives behind this unique and quite neglected consumption behaviour.

The present study builds on the existing research of collecting in several important ways: First, contrary to the existing literature of collecting that focuses on the net effect estimation of single motives, this study examines how combinations of motives may synergistically lead to certain types of collecting behavior. The present paper suggests that potential motives should not be seen separately and in isolation with each other, but as combinations that collectively affect different types of collecting behaviour, after controlling for the influence of certain demographic characteristics. This premise leads to the second contribution of our work, that is, to consider the interplay between both financial and non-financial motives in jointly influencing collecting behavior – an issue for which very little is currently known from the existing literature. Our work provides new insights into the relevant literature of collecting by showing that alternative routes and combinations of motives may lead to certain types of collecting behaviour, in the presence or absence of certain economic and non-economic (hedonic) motives. Third, we empirically derive a collectors' typology, on the basis of various collecting behavior traits, and provide a nuanced coverage of how motives affect different collector types. In doing so, we show that the proposed empirical typology is stable and generalizable across collectors of different demographic characteristics. Fourth, from a methodological

perspective, we demonstrate the value of fuzzy-set qualitative comparative analysis (fsQCA) as a bridge between qualitative and quantitative approaches, in an attempt to explore alternative complex causal conditions that give rise to different types of collecting behaviour. Qualitative approaches allow each case to be considered as a complex entity that needs to be deeply comprehended, while quantitative approaches allow the analysis of more than a few cases to produce generalizations. The merits of both approaches are important for the particular topic under examination. The proposed approach identifies the alternative sufficient combinations of financial and non-financial motives that lead to all four traits of collecting behaviour (i.e., set completion, perfection, caring and cooperation) - identified by Long and Schiffman (1997), as well as to their combinations, based on our empirically derived typology. The aforementioned complex interrelationships are examined within the context of Thai toy collectors, which is one of the most widely known collectors' communities in Thailand.

This study aims to describe combinatorial complexities assuming asymmetrical/non-linear relationships between various motives and engagement in different types of collecting behaviour. FsQCA achieves this by developing an original "synthetic strategy" as a middle way between the case-oriented (or qualitative), and the variable-oriented (or quantitative) approaches. To demonstrate the merits of the proposed approach, we develop a set of complex combinatorial research propositions pertaining to collecting. FsQCA results show that the proposed methodological approach offers much in terms of understanding causal relationships, by virtue of providing information that is unique in comparison with the information that conventional quantitative or qualitative methods provide.

2. **Theoretical background**

2.1. Collecting behavior typologies and traits

Collecting is a form of materialistic luxury consumption and has been defined by Belk (1995, p. 479) as *"the process of actively, selectively, and passionately acquiring and possessing things removed from ordinary use and perceived as part of a set of non-identical objects or experiences"*. On the contrary, Carey (2008) claims that collectibles may still maintain their ordinary functional value, but the key factor that differentiates them from other non-collectible objects is their additional aesthetic value.

Literature identifies several types of collectors. Danet and Katriel (1986) outlines two types of collectors based on their effort put in completing their collection: "Type A" collectors acquire items that they affectively engage with, but are not concerned with completing the set, while "Type B" collectors selectively acquire objects of the series and also constantly improve their knowledge regarding the collection. In contrast, Saari (1997) proposes four types of collectors. This typology identifies a) passionate collectors, who are obsessed with their collections, b) inquisitive collectors, who approach collecting as an investment activity, c) hobbyists, who primarily focus on the enjoyment of the collecting activity, and d) expressive collectors, who consider collecting as a way to express their self. In the same direction, Lee and Trace (2009) identifies three types of collectors, based on their level of interaction with other collectors. According to this classification, casual collectors are concentrated on acquiring the items of a collection, but have no intention to contact with fellow collectors. The other two types are social collectors and serious collectors. The former type focuses on socializing with collector

peers, more than simply gathering objects and knowledge, while the latter is also prone to exchange information and knowledge regarding their collections.

In line with the different types of collectors, Long and Schiffman (1997) summarize four relevant traits of collecting behavior, namely completion, perfection, caring, and cooperation. In psychology, trait theory is an approach to the study of human personality. Traits are habitual patterns of behavior, thought, and emotion. They are relatively stable over time, differ across individuals (or, in our case, collectors), and influence their actual behavior (Kassin, 2003). For example, some collectors share information and knowledge regarding collectibles with other collectors (i.e., cooperation trait) whereas others do not. A trait can be viewed as a personality dimension, with each person rating somewhere along its spectrum. Each type of collectors has its own collecting "personality", which consists of a unique combination of collecting traits.

2.1.1. Collection set completion

McIntosh and Schimelchel (2004) suggest that collecting process starts from goal formation, which usually refers to the completion of the set (Danet and Katriel, 1986). Although the items that are required for a given collection to be considered as complete, may vary among collectors due to their perception of the collection (Carey, 2008), set completion is an ideal state that collectors aim for (McIntosh and Schmeichel, 2004). The completion of a set presents collector's hard work and achievement, which may lead to self-esteem and respect from fellow collectors (Formanek, 1994).

2.1.2. Collection set perfection

Perfection is one of the strategies collectors use to postpone the completion of set. Flett

and Hewitt (2002) define perfectionism as a behavior that is characterized by a person's

striving for flawlessness and setting excessively high performance standards,

accompanied by overly critical self-evaluations and concerns regarding others'

evaluations. Danet and Katriel (1989) suggest that both physical and aesthetic perfection

of the set's objects is being considered by collectors. The physical perfection of the object

increases the degree of challenge during the collecting activity, because the physically

perfect objects are hard to find (Long and Schiffman, 1997).

2.1.3. Collection caring

Caring is another trait that differentiates collecting from the other forms of consumption.

Apostolou (2011) suggests that collectors put a lot of effort in caring their collectibles

(e.g., preparing the space for displaying the objects, spending time organizing and

cataloging them, etc). According to Long and Schiffman (1997), collectors seek for

relevant information and knowledge regarding the collectibles in order to provide the

proper treatment to their valuable items. Belk et al. (1989) explain that collectors tend to

care their collected items because of their perceived high sacred value, while Chen (2009)

suggests that collectors might see their collecting activity as a preservation of valuable

items.

2.1.4. Cooperation

The idea of collecting as an individual activity was challenged by Formanek (1991), who suggests that collecting is a social/cooperative activity that connects people who share similar interests. This brings us to the fourth trait of collecting behavior, which is cooperation. Indeed, Lee and Trace (2009) studied the community of hobbyist collectors and found that collectors are willing to share information and knowledge regarding collectibles with other collectors, while they also enjoy helping the new collectors to start their collecting activity.

2.2. Hedonic motives for collecting behavior

Despite the fact that collecting is a form of materialistic luxury consumption, none of the existing studies has so far examined how hedonic motives may collectively affect certain traits of collecting behavior, in the presence or absence of economic motives. This study considers the comprehensive inventory of hedonic shopping motives, proposed by Arnold and Reynolds (2003). Arnold and Reynolds (2003) propose a six factor inventory that consists of adventure, gratification, value, social, idea, and role shopping motives. We consider all these motives within the context of collecting, apart from the role motive, which is less relevant to the scope of the particular study.

2.2.1. Adventure motive

Adventure motive refers to a need for adventure, thrills, and excitement that drives individual behavior (Arnold and Reynolds, 2003). Collectors have to search, locate, and sometimes compete with others in order to possess the desired items. In other words,

collecting is similar to the act of hunting (Formanek, 1991) – an act that challenges and stimulates collectors. Long and Schiffman (1997) suggest that the attractiveness of collecting resides in the fun and excitement during the process of searching for the object. During the process of collecting, collectors earn a chance to escape from daily life and enter their own world of excitement.

2.2.2. Social motive

Lee and Trace (2009) indicate that some collectors may collect due to social motives, as a means to approach and be accepted by others. Pearce's (1995) study proposes that interpersonal relationship can be developed during the process of collecting. For example, a community of collectors can offer its members a sense of belongingness and social acceptance. As collectors devote a lot of effort in their collecting activity, they need their work to be accepted by the people both in and outside collecting community.

2.2.3. Gratification motive

Gratification is the pleasurable emotional reaction of happiness and satisfaction in response to a fulfillment of a desire or goal (Arnold and Reynolds, 2003). Koford and Tschoegl (1998) propose that collectors gain satisfaction by possessing objects the others cannot. Furthermore, Formanek (1994), and Pearce (1995) identify a sense of immortality as a source of satisfaction and superiority of collectors. They explain that the existence of the collection after the collectors' lives, make them feel that they can overcome death and become immortal, because a part of their selves still remain in this world. In addition, collectors achieve satisfaction through the sense of mastery. Belk (1995) proposed that in

the process of collecting, collectors develop their knowledge regarding the collected items and become experts of the specific field.

2.2.4. Idea motive

Consumption can also be motivated by external factors. Idea motive is a desire to keep up with trends and new fashions (Arnold and Reynolds, 2003). Individual consumption is influenced by trends and fashion, since human beings want to be accepted by important others. Although this motive has been extensively explored by studies examining how teenagers' consumption patterns are influenced by their peers (e.g., Niu et al, 2012), it has been left totally unexplored in the area of collecting.

2.2.5. Value motive

As noted earlier, economic value is one of the factors most widely examined in the area of collecting. According to Saari's (1997) collectors' classification, there are some collectors who collect items for investment purposes. Similarly, Formanek (1991) also found that collectors mentioned financial investment as a reason for collecting, and has been suggested that the rarity of the object adds extra value to the collectibles (Koford and Tschoegl, 1998). Although the actual price of the desired object is, in many cases, a secondary concern for the collectors, Arnold and Reynolds (2003) find that consumers consider obtaining discounts as an achievement, which leads to personal satisfaction.

2.3. Relevant research propositions

From the foregoing analysis it becomes evident that collecting is a unique form of materialistic luxury consumption, and therefore can be influenced by several other drivers, besides economic value, which can be drawn from the literature of hedonic motivation. Furthermore, although previous studies have commented on the various traits of collecting behavior (i.e., completion, perfection, caring and cooperation), proposed by Long and Schiffman (1997), none of them investigates the relationship between them and certain financial and nonfinancial/hedonic motives. Even the few studies, mainly in the economics literature, which have tried to explore the drivers of collecting behavior, focus on the net-effect examination of financial motives (e.g., Stoller, 1984; Burton & Jacobsen, 1999; Carey, 2008).

Against this background, this study examines how combinations of financial and nonfinancial / hedonic motives may collectively lead to certain traits of collecting behavior, based on the classification proposed by Long and Schiffman (1997). Contrary to previous research, this study claims that different motivations should not be seen as competing and in isolation with each other, but rather as coexisting that synergistically affect consumer's collecting behavior. Therefore, we first speculate that only combinations of motives can account for the presence of each collecting behaviour trait. More specifically, we propose that:

> **P1:** The joint presence of at least two (financial and/or non-financial) motives (adventure, social, gratification, idea, and value) is linked to each trait of collecting behaviour (completion, perfection, caring, cooperation).

However, we also assert that, in reality, individuals may possess different traits of collecting behavior simultaneously. As noted earlier, each type of collectors has its own collecting "personality", which consists of a unique combination of collecting traits. For example, a collector may put a lot of effort in caring their collectibles, while at the same time participate in communities of collectors as a means to connect and socialize with others who share similar interests. Therefore, we speculate that configurations of motives can also account for the presence of certain collecting trait combinations, and we explore exactly which motive configurations provide accurate and sufficient conditions for such combinations to occur, after controlling for the influence of certain demographic characteristics. To account for the influence of demographic characteristics we examine their role in identifying collecting trait combinations alone or in combination with motive configurations. More specifically, we propose that:

> **P2:** Certain demographic configurations are identifiable that affect motive configurations (of financial and/or non-financial motives).
>
> **P3:** Demographic configurations alone are insufficient for identifying collecting trait combinations accurately.
>
> **P4:** Motive configurations (of financial and/or non-financial motives) alone are sufficient for identifying collecting trait combinations accurately.
>
> **P5:** Configurations of (financial and/or non-financial) motives and demographics achieve high consistency indexes though low coverage indexes.

As we explain below, consistency represents the extent to which a causal configuration leads to an outcome, while coverage reflects how much of the outcome is explained by a

given causal configuration. In other words, if P5 is proven correct, it will suggest that motive and demographic configurations together are less informative (than motive configurations alone), because they cover a low number of cases with the given outcome. The propositions outlined above are graphically depicted in Figure 1.

Figure 1

3.   Method

3.1. Data collection and sample

This study focuses on Thai collectors. A random sample was created from an established toy collector community on Facebook, which contained contact details of all its members. Our focus was on toys that have been collected through purchase from online and offline retailers. We focused on toys, as they represent the fourth ranked collectible among adults over the age of 18 (Carey, 2008). More specifically, our random sample was drawn from the *"Toy Photography Thailand"* community. This community was chosen, as it represents one of the most widely known toy collectors' communities in Thailand, while it also ensures the diversity of toy collectors regarding the variety of collected items. This diversity allowed us to effectively examine the full spectrum of collecting behaviour traits. In total, 12,637 members are currently registered in this community. The 800 randomly identified respondents received an invitation e-mail requesting them to follow a link and participate in the survey. The online survey consisted of an introductory page, an instruction page, three separate sections of questions (focusing on collecting motives, collecting behavior traits, and demographics, respectively), and an ending page (thanking the respondents and asking them to submit any final comments). The questionnaire was

also pretested using a sample of 15 Thai toy collectors. The initial e-mail, together with one reminder e-mail, yielded 208 usable responses (26% response rate). The research team checked for non-response and common method biases by comparing the responses of early and late respondents and using Harman's single factor test, respectively. The results show that none of these biases poses a significant problem in this study. A random sample of 158 cases was used for the main analysis, while the remaining hold-out sample of 50 cases was used to validate our results. The total sample of 208 respondents was 123 females (59.1%) and 85 males (40.9%). Approximately half of the respondents' age was between 25 - 34 years old, followed by 18 - 24 years old (27%) and 35 - 44 years old (13%). The majority of respondents has at least a bachelor's degree (68.8% bachelor's degree, 25% master degree, and 0.5% doctorate degree) and been employed (49.5%) or run their own business (27.9%). Most respondents earn between 15,000 - 50,000 baht[1] per month. Approximately, one tenth and one fifth of all respondents has a monthly income that is above or below this range, respectively.

3.2. Measures

All measures are based on the existing literature and employ seven-point Likert-type scales. The measures of the four collecting behaviour traits derived from the work of Long and Schiffman (1997). These constructs were operationalized so as to understand how important each of the traits is for the collector. The five motivation constructs were operationalized so as to understand how strongly respondents felt about potential motivations to engage in collecting activities. The items for four of our motivation

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[1] 1 Thai Bhat equals 0.023 British Pounds (0.025 Euros)

constructs (i.e., adventure, gratification, idea, and value) were based on the study of

Arnold and Reynolds (2003), while items for the fifth motivation construct (i.e., social

motive), were based on the study of Formanek (1991). Construct operationalisations are

presented in Table 1.

Table 1

All scales show a satisfactory level of internal consistency reliability based on the

estimated Cronbach's alpha values: α = .86 (adventure), α = .80 (social), α = .78

(gratification), α = .80 (idea), α = .71 (value), α = .77 (completion), α = .71 (perfection), α

= .73 (caring), and α = .81 (cooperation). A confirmatory factor analysis model of the

constructs was estimated using AMOS. The fit of the model was satisfactory: cmin/df =

2.13, CFI=0.91, RMSEA=0.07. Table 2 suggests that the estimated Composite Reliability

(CR) values for all constructs are greater than the usual threshold of 0.7, suggesting that

scales are reliable. Additionally, all estimated CR values are greater than the estimated

Average Variance Extracted (AVE) values for all constructs and all AVE values are

greater than the usual threshold of 0.5. Evidently, the convergence validity of our scales

is also established. Finally, the estimated Maximum Shared Squared Variance (MSV) and

Average Shared Squared Variance (ASV) values for all constructs are lower than the

estimated AVE values, suggesting that discriminant validity of our scales can be also

established (Fornell and Larcker, 1981).

Table 2

Also, the square root of the AVE for each construct is greater than the correlation between the construct and any other construct; a finding which provides further evidence of discriminant validity.

3.3. Fuzzy-set Qualitative Comparative Analysis

3.3.1. Basic philosophy of fsQCA

FsQCA integrates the best features of the case-oriented (qualitative) and the variable-oriented (quantitative) approaches (Ragin, 1987). As a case-oriented technique, in fsQCA each case (observation) is considered as a complex entity that needs to be comprehended (Ragin, 1987; Rihoux, 2003). FsQCA addresses complexity through multiple conjunctural causation, which implies that (i) it is a combination of conditions that produces a phenomenon—outcome; (ii) several different combinations of conditions (causal paths) may produce the same outcome (a property called equifinality); (iii) depending on the context, a given condition may have a different impact on the outcome (relationships are rarely linear-symmetric) (Rihoux, 2003). As is the case with qualitative research techniques, in fsQCA the researcher does not specify a single causal model that fits the data, but instead determine the number and character of the different causal models that exist among comparable cases (Ragin, 1987). As a variable-oriented approach, fsQCA allows the analysis of more than a few cases and from those cases to produce generalizations, while it is based on Boolean algebra and requires that each case be reduced to a series of variables (called "conditions" and "outcome") (Ragin, 1987; Rihoux, 2003). Boolean technique allows the identification of causal regularities that are

parsimonious (i.e., they can be expressed with the fewest possible conditions within the whole set of conditions).

FsQCA triangulates principles of both qualitative and quantitative research techniques and offers researchers important benefits: (1) asymmetry (i.e., relationships between independent and dependent variables are treated as non-linear/asymmetric), (2) equifinality (i.e., multiple pathways may lead to the same outcome), and (3) causal complexity (i.e., combinations of antecedent conditions lead to the outcome, and hence, the focus is not on net-effects, but on combinatorial-synergistic effects) (Skarmeas et al., 2014).

3.3.2. Estimating solutions using fsQCA

In general, fsQCA is an analysis of set relationships. A set, in the case of fsQCA, is a group of values. Initially, the researcher must convert all variables into sets. This process is called "data calibration". Set membership scores can take any value from the continuous range of 0 to 1 and result from calibrating original variable scores into fuzzy-set scores. Fuzzy-set scores are not probabilities, but rather transformations of ordinal or interval scales into degrees of membership in the target set. Therefore, specific criteria must be set for three breakpoints in fuzzy-set calibration. The breakpoints include 0.05 for the threshold of full non-membership, 0.50 for the crossover point of maximum membership ambiguity, and 0.95 for the threshold of full membership (Ragin, 2008).

FsQCA identifies necessary and sufficient conditions that lead to a specific outcome condition (Ragin, 2008). Necessary conditions are needed to produce the outcome, though, are not always enough by themselves. Sufficient conditions always lead

to the given outcome, though, may not be the only ones that lead to this outcome. FsQCA allows the researcher to test for fuzzy-set membership in an outcome condition for all possible combinations of the antecedent factors.

      In fsQCA, the derived solutions as a whole and each solution term (i.e., pathway) are usually assessed on the basis of two measures — namely, consistency and coverage. Consistency represents the extent to which a causal combination leads to an outcome and ranges from 0 to 1 (Ragin, 2008). Consistency therefore tests for sufficiency but not for sufficiency and necessity (Woodside, 2013). After calculating consistency scores for all possible complex causal combinations that can lead to a specific outcome condition, the researcher must decide which of all possible combinations (pathways) to include in the final solution. The researcher selects a cutoff consistency value (which usually is equal to 0.80 or more) and retains all combinations that have high enough consistency scores in the final solution (Elliott, 2013). Coverage indicates how many cases in the dataset that have high membership in the outcome condition are represented by a particular causal complex condition. In other words, coverage reflects how much of the outcome is covered (explained) by each solution term (pathway) and by the solution as a whole (Ragin, 2008). The measure of consistency is analogous to a correlation coefficient, and the measure of coverage is analogous to the coefficient of determination (i.e., r2) (Woodside, 2013). The higher the consistency cutoff point the researcher sets for selecting the best combinations, the higher the final consistency will be, but the lower the respective coverage (Elliott, 2013; Ragin, 2008). Research (e.g., Ragin, 2008; Woodside,

2013) suggests that a model (solution) is informative when consistency is above 0.75 and coverage is between 0.25 and 0.65[23].

3.3.3. Advantages of fsQCA over correlational methods

Configurational approaches, such as fsQCA, can provide additional insights into the examined relationships, over conventional correlational methods. Configurational theory stresses the importance of nonlinearity (i.e., relationships between variables are not always symmetric and linear), synergistic effects (i.e., focus on effects of combinations of variables, rather than net effects), and equifinality (i.e., alternative paths can explain a given outcome). On the contrary, conventional correlational methods, such as regression analysis tend to rely on the principles of linearity, additive effects, and unifinality (Fiss, 2007). For instance, regression-based techniques (e.g., SEM) treat independent variables as competing in explaining variation in outcomes, rather than showing how variables combine to create outcomes. By focusing on the unique contribution of a variable, while holding constant all other variables, a correlational approach has difficulty in treating cases as configurations and examining combinations of variables (Fiss, 2007). Thus, correlational approaches fail to identify the specific conditions under which a variable may influence an outcome.

Studies use two- and three-way interaction effects to examine configurations in correlational techniques. From a theoretical perspective, configurations may well exceed

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[2] We used the software for fsQCA developed by Charles Ragin (available at:

http://www.u.arizona.edu/~cragin/fsQCA/software.shtml).

[3] For more information on fsQCA, the reader is also referred to the work of Skarmeas et al. (2014).

the limit of three variables (as is the case in the present study), but empirically, three-way interactions currently represent the boundaries of interpretable regression analysis (Dess, Lumpkin, & Covin, 1997). Furthermore, regression methods cannot take equifinality into account. Although interaction effects attempt to test a nonlinear relationship, they assume that this relationship is relevant for all cases. In other words, they fail to assess alternative paths that may lead to the same outcome.

4.   Analysis

4.1. Examining P1: Motive configurations for traits of collecting behaviour

In this section, we formally examine our first speculation that combinations of motives can account for the presence of each collecting behaviour trait (P1). More specifically, we explore which motive combinations exactly provide sufficient conditions for high presence of each trait separately. Table 3 presents the complex solutions of sufficient conditions (i.e., pathways), which lead to high membership in the four outcome conditions (i.e., collecting behaviour traits). Complex solutions, contrary to parsimonious and intermediate solutions, make no simplifying assumptions (Woodside, 2013). All four models are rather informative. Consistency values are higher than 0.75 and coverage values range between 0.51 and 0.82.

Table 3

4.1.1. Pathways to set completion

The model examining collection set completion suggests five pathways. A look at the derived pathways suggests that high levels of set completion require the joint presence of

at least two motives – a finding which is line with P1. For example, the first three pathways indicate that a combination of idea motive with social (pathway one) and adventure (pathway two) or gratification motive (pathway three) may lead to high levels of set completion, in the absence of other motives. Similarly, high presence of value and adventure (pathway four) or idea motive (pathway five) can also lead to high set completion, if certain other motives are low. The solution as a whole has a high consistency of 0.79 and a very satisfactory coverage of 0.67. All five motives can potentially have either a facilitating or a deleterious effect depending on the combination of the antecedent conditions that synergistically occur in the given causal recipe. This finding implies a nonlinear/asymmetric relationship between motives and set completion.

4.1.2. Pathways to set perfection

Four pathways lead to high levels of set perfection. The results suggest that high levels of set perfection require the joint presence of at least two motives in three out of four derived recipes. This finding is again in favour of P1. For example, high levels of value and social motives, combined with adventure (pathway two) or idea motive (pathway three), may lead to high levels of set perfection, in the absence of other motives. However, we also found that in the absence of all other motives, social motives alone can lead to set perfection (pathway four). The solution as a whole has a satisfactory consistency of 0.84 and a high coverage of 0.51. Again, the results suggest that all five motives can be either present or absent depending on the combination of additional antecedent conditions that occur in the given causal recipe. Evidently, a non-linear relationship between motives and set perfection seems to exist.

4.1.3. Pathways to set caring

The model examining set caring suggests six pathways. The results show that high levels of set caring require the joint presence of at least two motives in three out of six derived recipes. This finding partially supports P1. For example, the presence of adventure (pathway one) or social (pathway five) or value motive (pathway six) may under conditions lead to high levels of set caring, even without the joint occurrence of other motives. The solution as a whole has a high consistency of 0.76 and a very satisfactory coverage of 0.82. All five motives can be either present or absent depending on the combination of additional antecedent conditions that occur in the given causal recipe. A non-linear relationship between motives and set caring seems to exist.

4.1.4. Pathways to cooperation

The model examining collecting cooperation suggests six pathways. The results reveal that high levels of cooperation require the joint presence of at least two motives in three out of six derived recipes. This finding partially supports P1. For example, the presence of adventure (pathway one) or social (pathway five) or value motive (pathway six) may under conditions lead to high levels of cooperation, even without the joint occurrence of other motives. The solution as a whole has a satisfactory consistency of 0.76 and a very high coverage of 0.79. Again, the results for cooperation suggest that all five motives can be either present or absent depending on the combination of additional antecedent conditions that occur in the given causal recipe.

4.2. Examining P2-P5: Motive and demographic configurations for collecting trait combinations

Until today, researchers have not fully exploited the potential of fsQCA. Most analyses so far only consider cases displaying the presence of some outcome condition (i.e., cases with a 1 outcome value). Very few authors have exploited the capability of this approach for testing intersections between segments of theory and the actual data matrix (Rihoux, 2003). In this paper, we attempt to identify complex combinations of antecedent conditions that lead to the intersections of certain outcome set conditions. From a theoretical perspective, this examination is of major importance, because as explained earlier, collectors may possess simultaneously different traits of collecting behaviour. As a result, viewing each trait separately and in isolation may provide a myopic view of reality.

In this section, we formally examine our speculation that configurations of motives can account for the presence of certain collecting trait combinations. More specifically, based on P2-P5, we explore exactly which motive configurations provide accurate and sufficient conditions for the presence of certain collecting trait combinations, after controlling for the influence of demographic characteristics. To examine relevant propositions, we work backwards in three steps. In step one, using cluster analysis, we empirically identify different collecting trait combinations (i.e., taxonomy/typology of collectors). In step two, using fsQCA, we identify complex configurations of motives and/or demographics that lead to the empirically derived typology of collectors. In step three, we identify demographic configurations that lead to the derived motive case configurations of step two.

4.2.1. Step 1: Identifying collecting trait combinations – A typology of collectors

To derive an empirical typology of collectors, we used a two-step cluster analysis, which has been the dominant tool of analysis for defining groups (see e.g., Ketchen and Shook, 1996). The four traits of collecting behaviour were used as clustering variables to identify subgroups of specific trait combinations. In a first step, a preliminary hierarchical cluster analysis using Ward's minimum variance method suggested a three-cluster solution, based on cutoff values and inspection of dendrograms (Ferguson, Deephouse, Ferguson, 2000). After determining this three-cluster solution, we used K-means cluster analysis in a second step, with the centroid values of the hierarchical analysis as "seeds" (e.g., Lim, Acito, & Rusetski, 2006). Note that variables were calibrated for the purposes of fsQCA, a treatment which also assures comparability across them. The results of the predictor importance analysis for the initial three-cluster solution suggested that for a cutoff level of 0.4, "perfection", is not an important predictor for cluster membership in the derived three-cluster solution of the initial analysis. The analysis was therefore repeated with the remaining three collecting traits within the cutoff level. The second analysis did not lead to further restriction of included variables. The results of the subsequent predictor importance analysis, along with the four identified clusters, are presented in Table 4 and have a fair cluster quality. The most important predictor for cluster membership is "completion" (1.0), followed by "caring" (0.72) and "cooperation" (0.67).

Table 4

The first cluster comprised 22.8% of cases and is associated with high levels of "caring" and "cooperation" and low levels of "completion". The second cluster comprised 33.5% of cases and is associated with high levels in all three collecting traits. The third cluster comprised 27.2% of cases and is associated with high levels of "caring" and "completion". Finally, the fourth cluster comprised 16.5% of cases and is associated with relatively high levels of "cooperation" and low levels of "completion" and "caring".

We also validated the final four-cluster solution. The most common method of validation of the clustering solution is repeating the clustering procedure in a different random sample from the same population. To perform the validation process, we split the original sample of 208 respondents and began the process with a partial sample of 158 cases, reserving a portion of 50 cases for validation. The solution can be considered stable and generalizable to the population, since we were able to replicate it (Aldenderfer & Blashfield, 1984).

By drawing on the results of cluster analysis, we can think about collectors in terms of the positions they occupy in a three-dimensional space. Positions in this space characterize collectors by their affinity for the three traits of collecting behavior. We found empirical evidence in support of four general positions (clusters), as illustrated in Figure 2.

Figure 2

These clusters can be interpreted as follows: Cluster 1 - The extrovert altruists: These collectors care a lot about their collections and, although they are unlikely to

possess any completed sets, they seem to have an unselfish concern for the welfare of other collectors, since they cooperate extensively to share relevant information. Cluster 2 - The expert professionals: These collectors span boundaries on all three dimensions, since they actively engage in and place equal importance on all traits of collecting behavior. Cluster 3 - The introvert focusers: These collectors focus on their collections, since they care about them, but most importantly they like possessing fully completed sets, while at the same time they tend to participate less in collectors' communities, compared to other types of collectors. Cluster 4 - The hobbyist socializers: These collectors are amateur in collecting, since they do not span boundaries on any dimension. Someone could claim that socializing with other collectors is probably their only collecting behavior characteristic, since they are unlikely to either care about their collectibles or possess any completed sets.

4.2.2. Step 2: Identifying configurations of motives and/or demographics for each type of collector

In this section, we formally examine P3-P5 by exploring the complex configurations of motives and/or demographics that lead to the four collector types of the proposed typology.

The derived solutions regarding the configurations of demographics that lead to the four collector types of the proposed typology, were not informative. All pathways had very low coverage values (less than 0.17) and most consistency scores were well below the usual threshold of 0.75, suggested in previous research (e.g., Ragin, 2008; Woodside, 2013). Even when we increased the cutoff consistency score, as a means to produce more

informative pathways, the resulting coverage value of the new solution became even lower. We remind the reader that the higher the consistency cutoff point, the higher the final solution consistency will be, but the lower the solution coverage will be (Elliott, 2013). Evidently, demographic configurations alone are insufficient for identifying types of collectors accurately[4]. This finding supports P3 and implies that the derived empirical typology of collectors is stable and generalizable, and does not fluctuate across different configurations of demographic characteristics.

Similarly, the solutions regarding the configurations of motives and demographics that lead to the four collector types, suggested that although the derived models had very high solution consistency values (higher than 0.87), solution coverage indexes were very low (even as low as 0.15 and 0.09 in the models of "extrovert altruists" and "hobbyist socializers", respectively)[5]. On the contrary, the solutions regarding the configurations of motives that lead to the four collector types were rather informative. Solution consistency values were higher than the usual threshold of 0.75 and solution coverage values range between 0.49 and 0.61.These results collectively suggest that although motive configurations alone are sufficient for identifying types of collectors accurately, motive and demographic configurations together are less informative, because they cover a low number of cases with the given outcome. These findings provide evidence in support of P4 and P5 and imply that the derived empirical typology can be accurately explained on the basis of motive configurations and does not vary or fluctuate across collectors of different demographic characteristics.

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[4] Relevant solutions are available upon request from the authors

[5] Relevant solutions are available upon request from the authors

From the foregoing analysis, it is evident that motive configurations alone represent the most informative and sufficient solutions for explaining different types of collectors. Relevant results, presented in Table 5, suggest two pathways that lead to high membership score in the outcome condition of caring AND cooperation AND completion (i.e., expert professional collectors). The solution suggests that adventure and social motives should be combined with either idea motive (in the absence of value motive) or value motive (in the absence of idea motive). For expert professional collectors, it seems that a) adventure and social motives are always present – necessary conditions, b) idea and value motives cannot jointly occur, and c) gratification motive has a deleterious role.

The solution that leads to high membership score in the outcome condition of caring AND completion (i.e., introvert focusers) derived two causal recipes. Adventure and idea motives should be combined with either social or gratification motive. For introvert focusers, it seems that a) adventure and idea motives are always present – necessary conditions, b) social and gratification motives can play a facilitating role, while c) value motive has a deleterious influence.

The solution that leads to high membership score in the outcome condition of caring AND cooperation AND negated completion (i.e., extrovert altruists) suggests two causal pathways. Adventure and social motives must be combined with low gratification motive, while either idea motive (in the absence of value motive) or value motive (in the absence of idea motive) should be present. For extrovert altruists, it seems that a) adventure and social motives are always present, and gratification motive is always absent – necessary conditions, while b) idea and value motives cannot jointly occur.

Finally, the solution that leads to high membership score in the outcome condition of cooperation AND negated completion AND negated caring (i.e., hobbyist socializers) suggests two causal pathways. Social motive must be combined with low gratification and low value motives, while adventure and idea motives can be either present or absent. For hobbyist socializers, it seems that a) social motive is always present, and b) gratification and value motives are always absent - necessary conditions.

Table 5

4.2.3. Step 3: Identifying demographic configurations that lead to motive case configurations

In this section, we formally examine P2 that certain demographic configurations are identifiable to affect motive configurations. To investigate this proposition, we derive solutions of demographic combinations that lead to the necessary motive configurations identified in step 2. Relevant results are presented in Table 6.

Table 6

Inspection of Table 6 suggests that the derived solutions are not very informative, since they all have very low coverage values (less than 0.10), while some solution consistency scores are well below the usual threshold of 0.75, suggested in previous research (e.g., Ragin, 2008; Woodside, 2013). Even if we increase the cutoff consistency score, as a means to produce more informative pathways, the resulting coverage value of

the new solution will become even lower. Evidently, although certain demographic configurations are identifiable to affect motive configurations, alone are insufficient as they represent a low number of cases with the given outcome configurations.

More specifically, the solution that leads to high membership score in the outcome condition of adventure AND social motives (i.e., necessary conditions for "expert professionals", based on step 2) refers to females, of elder age, and lower income. The solution leading to the outcome condition of adventure AND idea motives (i.e., necessary conditions for "introvert focusers", based on step 2) refers to females, of elder age, higher education, and lower income. The solution derived for adventure AND social AND negated gratification motives (i.e., necessary conditions for "extrovert altruists", based on step 2) refers to females, of elder age, lower education, and higher income. Finally, the solution for social AND negated gratification AND negated value motives (i.e., necessary conditions for "hobbyist socializers", based on step 2) refers to males, of younger age, lower education, and lower income.

We remind our reader that these demographic profiles must only be viewed as illustrative examples and not as exhaustive solutions, since they have very low coverage values, and hence, they represent just a limited number of cases that exhibit the particular combinations of outcome conditions. As noted earlier, the derived typology can be sufficiently explained on the basis of motive configurations alone, and is generalizable across collectors of different demographic characteristics.

5.   **Conclusions and implications**

In this paper we explore how combinations of motives may synergistically lead to certain types of collectors. Contrary to the existing literature that focuses on the net effect estimation, and treats motives separately and as competing with each other in explaining collecting behavior, the present study suggests that potential motives should not be seen in isolation, but as combinations. In this direction, we consider how financial and non-financial motives can jointly influence collecting behavior – an issue for which very little is currently known from the existing literature. Based on the established collecting behavior traits, proposed by Long and Schiffman (1997), we derive an empirical typology of collectors. Our aim is to identify the alternative and sufficient combinations of financial and non-financial motives that lead to each one of the four collector types of our proposed typology.

We assert that although each motive may vary independently, its actual effect on collecting, depends on the combination of the additional motives that synergistically occur in the given causal recipe. The present study views adventure, social, gratification, idea and value motives as key drivers that trigger various traits of collecting behavior (i.e., set completion, perfection, caring, and cooperation), and collector types (i.e., expert professionals, introvert focusers, extrovert altruists, hobbyist socializers).

From a methodological perspective, we demonstrate the value of fsQCA in addressing these complex interrelationships. Although most fsQCA studies so far have only considered cases displaying the presence of some outcome condition (i.e., cases with a 1 outcome value), the present study exploits further the capability of this approach, by testing intersections of outcome set conditions, which in essence, represent the different

collector types of our proposed typology. The effect of certain demographic variables has also been taken into consideration, and we show that the proposed typology is generalizable and stable across collectors of different demographic characteristics.

Table 7 summarizes key indexes of all models we estimated to examine a set of relevant propositions.

Table 7

With regards to the models explaining different combinations of collecting traits (last three rows of Table 7), we show that motive configurations alone are sufficient and represent the most informative solution, since the derived pathways have satisfactory consistency (higher than 0.72) and coverage (from 0.49 - 0.61) scores. On the contrary, demographic configurations alone or in combination with motive configurations produce solutions with very low coverage scores, and hence relevant pathways represent a limited number of cases exhibiting the given outcome conditions. In other words, the results suggest that there are numerous configurations of demographics, which can explain each collecting trait combination, and hence the derived demographic configurations can only explain a small portion of the outcome. Evidently, our empirical typology is generalizable across individuals of different demographic characteristics.

Table 8 illustrates the derived causal recipes of motives that associate with each one of the four collector types of our proposed typology.

Table 8

FsQCA results suggest that although there are no simple antecedent motives that represent necessary conditions for the traits of collecting behavior, there are combinations of motives that represent necessary conditions for each collector type. More specifically, we found that "expert professionals" are mainly driven by adventure and social motives, while the role of idea motive is crucial for "introvert focusers". Adventure and social motives are necessary conditions for "extrovert altruists", while gratification has a deleterious role. The presence of social motive is necessary for "hobbyists", while the absence of value motive is also required for this type of collectors. Evidently, financial and non-financial (hedonic) motives can jointly influence collecting behavior, and therefore, they should not be seen separately and in isolation with each other. Our proposed empirical typology of collectors is consistent with existing typologies found in the literature. For example, "introvert focusers" have similarities with the "passionate collectors" of Saari (1997) and the "casual collectors" of Lee and Trace (2009), while "extrovert altruists" and "hobbyist socializers" share similarities with "Type A" collectors of Danet and Katriel (1986), and "social collectors" of Lee and Trace (2009), respectively. Finally, "expert professionals" relate more to the "serious collectors" proposed by Lee and Trace (2009).

5.1. Managerial implications

Collectibles can be a strategy for brands to maintain existing users and reinforce loyalty levels. Global brands, such as Swatch and Coca-Cola have been acquired for collection rather than typical consumption purposes. For example, it is widely known, the seemingly

insatiable desire for Swatch watches that many consumers-collectors had during the late 1980s to early 1990s. Similarly, in the many years that Coca-Cola has been in business, there have been many styles of the old Coca Cola bottles. Each style is unique and collectible, especially those bottles that are rarer, and therefore more valuable than others. The Coca-Cola collectors club boasts 7,500 members in 23 countries who collect Coca-Cola memorabilia from bottles and cans, to vending machines and coolers (Slater, 2001).

Undoubtedly, brand collectibles are big business. Mattel regularly manufactures collectible lines of Barbie dolls, some in designer clothing (e.g., Donna Karan), others as brands (e.g., Harley-Davidson Barbie, Coca-Cola Barbie, and The Gap Barbie). Hallmark every year introduces a line of collectible Christmas ornaments, while McDonald's is selling Ronald McDonald cookie jars and dolls. Coca-Cola, Hallmark, McDonald's, and Harley-Davidson are just a few of the corporations that have signed agreements to tie their brands to collectible dolls, plates, and Christmas ornaments (Loro, 1995). These mass-merchandising efforts have extended the individual brands by making them collectible. As a result, companies must implement marketing strategies to attract new collectors and increase purchase frequency among current collectors. In doing so, marketers and brand managers should monitor the motivation behind this complex consumption behavior. The mosaic of motivations to engage in collecting behavior varies across different collecting behavior traits and types of collectors, and therefore specifically tailored strategies are required.

For example, it seems that consumers who participate in collecting activities because of the fun and excitement of the searching process (i.e., adventure motive), and because of the desire to keep up with trends and new fashions (i.e., idea motive), tend to

focus extensively on their collections. Such collectors care a lot about their collections, but most importantly, they like possessing fully completed sets, while at the same time they tend to participate less in collectors' communities, compared to other types of collectors. We named this type of collectors as "introvert focusers" and manufacturers should target this group by keeping it happy and by increasing the thrill of the hunt. Manufacturers can raise the level of tension in collecting by using advertising that promotes collecting the entire set (e.g., "collect all six" or "collect while supplies last").

Also, we found consumers who engage in collecting behavior mainly to approach and be accepted by others (i.e., social motive), and not because they are attracted by the economic value of the collectibles (i.e., absence of value motive). These consumers tend to be more amateur in collecting, and socializing with other collectors is probably their only collecting behavior characteristic. Such collectors are unlikely to either care about their collectibles or possess any completed sets. We named this type of collectors as "hobbyist socializers" and manufactures should target this group by promoting the social value of collecting the good. Manufacturers can achieve this by releasing collector's guides and creating discussion groups or having trading clubs.

Furthermore, the results suggest that there are consumers who participate in collecting activities due to the excitement involved in the process of searching for the objects (i.e., adventure motive), and as a means to approach and be accepted by others (i.e., social motive), but at the same time, they are not internally motivated by positive feelings of self-satisfaction or a sense of superiority (i.e., absence of gratification motive). These consumers seem to have an unselfish concern for the welfare of other collectors and they cooperate extensively to share relevant information with others. They care a lot

about their collections, although they are unlikely to possess any completed sets. We named this type of collectors as "extrovert altruists" and manufacturers should target this group by oversaturating the market. By releasing too many sets, too many variations within sets, and too many "limited editions", manufacturers can instill a sense of overwhelming, and in this way, reduce the utility gained from completing sets. Extrovert altruists are unlikely to collect "it all", but they may unselfishly help others in completing their own sets.

Finally, we identified a group of collectors that seems to be the most active, as it places equal emphasis on all traits of collecting behavior. We named this type of collectors as "expert professionals". This group is mainly motivated by the excitement of searching for unique objects (i.e., adventure motive) and the desire to be accepted by others (i.e., social motive). Manufacturers should target this group by promoting the thrill of the hunt and by marketing lines in such a way as to give its collectors a sense of rarity through limited editions.

5.2. Limitations and directions for further research

This study examined the various combinations of motives that give rise to certain traits of collecting behavior and collector types. In doing that, our focus was on toys that have been collected through purchase from online and offline retailers. We focused on toys, as they represent the fourth ranked collectible among adults over the age of 18 (Carey, 2008). Although it is logical to assume that there is a common underlying pattern of motivations behind collecting in general, it is also true that collectibles are not only acquired through purchase, but can be also given for free as branded giveaways. For

example, McDonald's restaurants regularly offer toys with their trademark as collectibles. Although these premiums are given for free, they may increase their value over time and become globally traded among collectors. Considering the different starting values of purchased collectibles and free brand collectibles, a study comparing collectors' motivations and attitudes towards those two types of collectibles would be an interesting direction for future research.

Furthermore, it is common knowledge that some brands (e.g., Coca Cola) become collectible when they are offered as mass-merchandising, while others are collectible independently of that (e.g., Swatch watches). Future research could examine if there is a common pattern, even for so different kind of products. It is reasonable to expect that motivations behind the collection of, let's say, Swatch watches and McDonald's gadgets are consistently different. Different levels of product involvement are likely to influence the collecting behavior according to the types of collectibles that are considered. A study examining collectors' motivations for different types of collectibles and levels of product involvement would be a worth considering extension of the present work.

FsQCA can provide new insights into the examined complex interrelationships, compared to correlational approaches, such as regression-based models. The proposed approach, which triangulates merits from both qualitative and quantitative research techniques, suggests that the relationships among variables are rarely linear or symmetric and should not be seen in isolation with each other. Future research should compare the applicability of fsQCA and regression-based approaches within the particular context, and contrast the additional insights the proposed technique can offer. We hope the present work will motivate further research in this interesting and quite neglected area of study.

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Table 1. Construct operationalizations

Construct	Source	Adapted items
Adventure motive	Arnold and Reynolds (2003)	• To me, collecting is an adventure. • I find collecting stimulating. • Collecting is a thrill to me. • Collecting makes me feel like I am in my own universe.
Social motive	Formanek (1991)	• I collect to become a part of an acceptable group of people. • I collect to share a part of myself with others. • To me, collecting is a way to open the world of friendship with people around the world.
Gratification motive	Arnold and Reynolds (2003)	• When I'm in a down mood, collecting makes me feel better. • To me, collecting is a way to relieve stress. • I earn new collectible toys when I want to treat myself to something special.
Idea motive	Arnold and Reynolds (2003)	• I collect to keep up with the trends. • I collect to keep up with the new fashions. • I collect to experience new things.
Value motive	Arnold and Reynolds (2003)	• For the most part, I collect items that are on sales. • I enjoy looking for discounts of collectibles. • I enjoy hunting for the greatest bargains when I search for collectibles. • For me, collecting is a means of investment. • I collect to earn profit from collectibles.
Completion	Long and Schiffman (1997)	• Each toy in my collection is unique.* • Each toy in my collection is from a different set.* • I want to possess all items in a set. • I travel around to hunt for items in order to complete the set.
Perfection	Long and Schiffman (1997)	• To be in my collection, a toy has to be in pristine condition. • To be in my collection, a toy has to in its original box. • I collect modified toys.* • I collect toys that have manufacture mistakes.*

Construct	Source	Adapted items
Caring	Long and Schiffman (1997)	• Each toy in my collection receives unique treatment.
		• Each toy in my collection has different maintenance needs.
		• I want all items in a set to have the treatment they deserve.
		• I travel around to find the appropriate person to maintain my collectibles.
Cooperation	Long and Schiffman (1997)	• I really enjoy helping a new collector get started his/her collection.
		• I enjoy sharing toy information with other collectors.
		• I wouldn't tell my friends who collect the same toys where I find my best buys of the collection.*

*Reverse scored item

Table 2. Measures of validity and reliability

	CR	AVE	MSV	ASV	Factor correlation matrix with square root of the AVE on the diagonal								
					(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Caring (1)	0.756	0.520	0.450	0.252	0.721								
Adventure (2)	0.867	0.621	0.593	0.263	0.586	0.788							
Social (3)	0.801	0.573	0.334	0.258	0.467	0.558	0.757						
Gratification (4)	0.807	0.592	0.493	0.166	0.420	0.770	0.371	0.779					
Idea (5)	0.832	0.636	0.295	0.100	0.233	0.245	0.543	0.220	0.797				
Value (6)	0.728	0.526	0.366	0.208	0.605	0.467	0.559	0.371	0.367	0.653			
Completion (7)	0.786	0.652	0.382	0.149	0.618	0.426	0.443	0.282	0.382	0.346	0.807		
Perfection (8)	0.773	0.507	0.259	0.070	-0.163	-0.218	-0.509	-0.164	-0.225	-0.295	-0.149	0.712	
Cooperation (9)	0.814	0.686	0.450	0.208	0.671	0.590	0.578	0.361	0.090	0.539	0.260	-0.196	0.829

Table 3. Motive configurations for traits of collecting behaviour (models for P1)

Complex solution	Raw coverage	Unique coverage	Consistency
Completion			
Model: CP=f(adv, soc, grat, idea, val)			
soc*~grat*idea	0.40	0.01	0.86
adv*soc*idea	0.49	0.13	0.85
~soc*grat*idea*~val	0.28	0.03	0.90
adv*~grat*~idea*val	0.28	0.05	0.87
~adv*~grat*idea*val	0.35	0.02	0.87
solution coverage: 0.67; solution consistency: 0.79			
frequency cutoff: 1.00; consistency cutoff: 0.88			
Perfection			
Model: PF=f(adv, soc, grat, idea, val)			
~soc*grat*idea*~val	0.27	0.07	0.88
adv*soc*~grat*val	0.35	0.01	0.88
soc*~grat*idea*val	0.37	0.04	0.88
~adv*soc*~grat*~idea*~val	0.25	0.03	0.88
solution coverage: 0.51; solution consistency: 0.84			
frequency cutoff: 1.00; consistency cutoff: 0.88			
Caring			
Model: CA=f(adv, soc, grat, idea, val)			
adv*~soc*~idea	0.40	0.03	0.79
adv*grat*~val	0.41	0.02	0.81
soc*~grat*idea	0.37	0.01	0.80
adv*soc*val	0.57	0.14	0.87
~adv*soc*~grat*~val	0.29	0.01	0.85
~soc*~grat*~idea*val	0.30	0.02	0.86
solution coverage: 0.82; solution consistency: 0.76			
frequency cutoff: 1.00; consistency cutoff: 0.85			
Cooperation			
Model: CO=f(adv, soc, grat, idea, val)			
adv*~soc*~idea	0.39	0.03	0.79
adv*grat*~val	0.42	0.02	0.83
adv*soc*idea	0.48	0.01	0.84
adv*soc*val	0.56	0.05	0.86
~adv*soc*~grat*~val	0.29	0.03	0.87
~soc*~grat*~idea*val	0.28	0.02	0.80
solution coverage: 0.79; solution consistency: 0.76			
frequency cutoff: 1.00; consistency cutoff: 0.82			

Table 4. Final four-cluster solution

	Predictor importance	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Size		22.8% (36)	33.5% (53)	27.2% (43)	16.5% (26)
Clustering variables	Completion (1.00)	2.78	5.82	4.62	2.10
	Caring (0.72)	5.08	5.84	4.17	2.46
	Cooperation (0.67)	6.18	5.72	3.90	3.62

Table 5. Motive configurations for combinations of collecting traits (models for P4)

Complex solution	Raw coverage	Unique coverage	Consistency
Expert Professionals:			
Caring AND Cooperation AND Completion			
Model: CA●CO●CP=f(adv, soc, grat, idea, val)			
adv*soc*idea*~val	0.41	0.12	0.75
adv*soc*~grat*~idea*val	0.37	0.08	0.79
solution coverage: 0.49; solution consistency: 0.72			
frequency cutoff: 1.00; consistency cutoff: 0.79			
Introvert Focusers:			
Caring AND Completion			
Model: CA●CP=f(adv, soc, grat, idea, val)			
adv*soc*idea	0.58	0.24	0.77
adv*grat*idea*~val	0.37	0.03	0.80
solution coverage: 0.61; solution consistency: 0.75			
frequency cutoff: 1.00; consistency cutoff: 0.83			
Extrovert Altruists:			
Caring AND Cooperation AND Negated Completion			
Model: CA●CO●~CP=f(adv, soc, grat, idea, val)			
adv*soc*~grat*idea*~val	0.39	0.051	0.77
adv*soc*~grat*~idea*val	0.45	0.11	0.79
solution coverage: 0.50; solution consistency: 0.74			
frequency cutoff: 1.00; consistency cutoff: 0.77			
Hobbyist Socialisers:			
Cooperation AND Negated Completion AND Negated Caring			
Model: CO●~CP●~CA=f(adv, soc, grat, idea, val)			
~adv*soc*~grat*~idea*~val	0.47	0.11	0.79
adv*soc*~grat*idea*~val	0.42	0.06	0.80
solution coverage: 0.52; solution consistency: 0.75			
frequency cutoff: 1.00; consistency cutoff: 0.79			

Table 6. Demographic configurations for combinations of motives (models for P2)

| Complex solution	Raw coverage	Unique coverage	Consistency
Adventure AND Social			
Model: ADV●SOC=f(gender, age, education, income)			
~gender*age*~income	0.10	0.10	0.74
solution coverage: 0.10; solution consistency: 0.74			
frequency cutoff: 1.00; consistency cutoff: 0.71			
Adventure AND Idea			
Model: ADV●IDEA=f(gender, age, education, income)			
~gender*age*education*~income	0.10	0.10	0.74
solution coverage: 0.10; solution consistency: 0.74			
frequency cutoff: 1.00; consistency cutoff: 0.74			
Adventure AND Social AND Negated Gratification			
Model: ADV●SOC●~GRAT=f(gender, age, education, income)			
~gender*age*~education*income	0.01	0.01	0.32
solution coverage: 0.01; solution consistency: 0.32			
frequency cutoff: 1.00; consistency cutoff: 0.32			
Social AND Negated Gratification AND Negated Value			
Model: SOC●~GRAT●~VAL=f(gender, age, education, income)			
gender*~age*education*~income	0.04	0.04	0.36
solution coverage: 0.04; solution consistency: 0.36			
frequency cutoff: 1.00; consistency cutoff: 0.36			

Table 7. Summary of fsQCA results for proposition testing

|	Outcome condition			Consistency indexes	Coverage indexes	Proposition
	Motive combinations	Collecting trait combinations (Collector types)	Individual collecting traits			
Motive configurations	N/A	N/A	21 pathways	Satisfactory (Higher than 0.75)	Satisfactory (Range from 0.51-0.82)	P1: Partially supported
Demographic configurations	4 pathways	N/A		Range from 0.32 – 0.74	Very Low (Less than 0.10)	P2: Supported
Demographic configurations	N/A	4 pathways		Range from 0.43 – 0.85	Very Low (Less than 0.17)	P3: Supported
Motive configurations	N/A	8 pathways		Satisfactory (Higher than 0.72)	Satisfactory (Range from 0.49-0.61)	P4: Supported
Demographic and Motive configurations	N/A	15 pathways		Satisfactory (Higher than 0.87)	Very Low (Range from 0.09-0.35)	P5: Supported

(Antecedent condition — row label spanning left side of the table)

Table 8. Motive configurations for high levels of collecting trait combinations.*

	Outcome condition											
	Caring AND Cooperation AND Completion			**Caring AND Completion**			**Caring AND Cooperation AND Negated Completion**			**Cooperation AND Negated Completion AND Negated Caring**		
	(Expert Professionals)			(Introvert Focusers)			(Extrovert Altruists)			(Hobbyist Socialisers)		
Antecedent condition	1st	2nd	Conclusion	1st	2nd	Conclusion	1st	2nd	Conclusion	1st	2nd	Conclusion
Adventure	•	•	●	•	•	●	•	•	●	○	•	Ø
Social	•	•	●	•		Ø	•	•	●	•	•	●
Gratification		○	Ø		•	Ø	○	○	◯	○	○	◯
Idea	•	○	Ø	•	•	●	•	○	Ø	○	•	Ø
Value	○	•	Ø		○	Ø	○	•	Ø	○	○	◯

*Black circles indicate high presence of a condition, and white circles indicate low presence (i.e., absence) of a condition. Large black (white) circles indicate a core-necessary condition of presence (absence). "Ø" indicates a peripheral (not necessary) condition. Blank spaces in a pathway indicate "don't care".
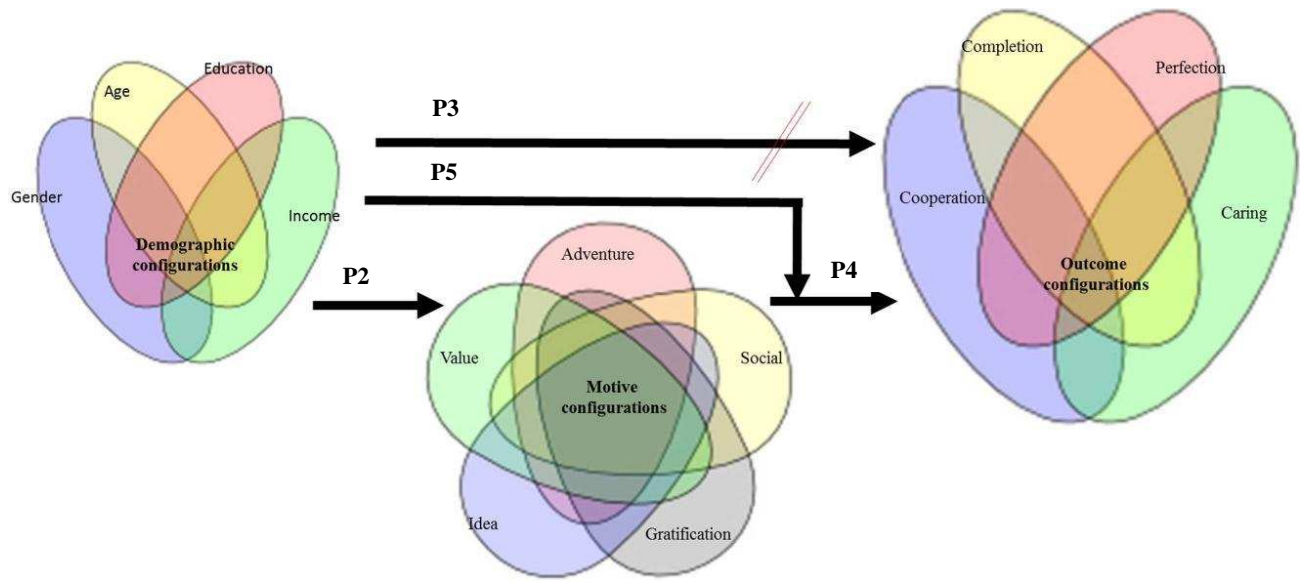
Figure 1 Research model
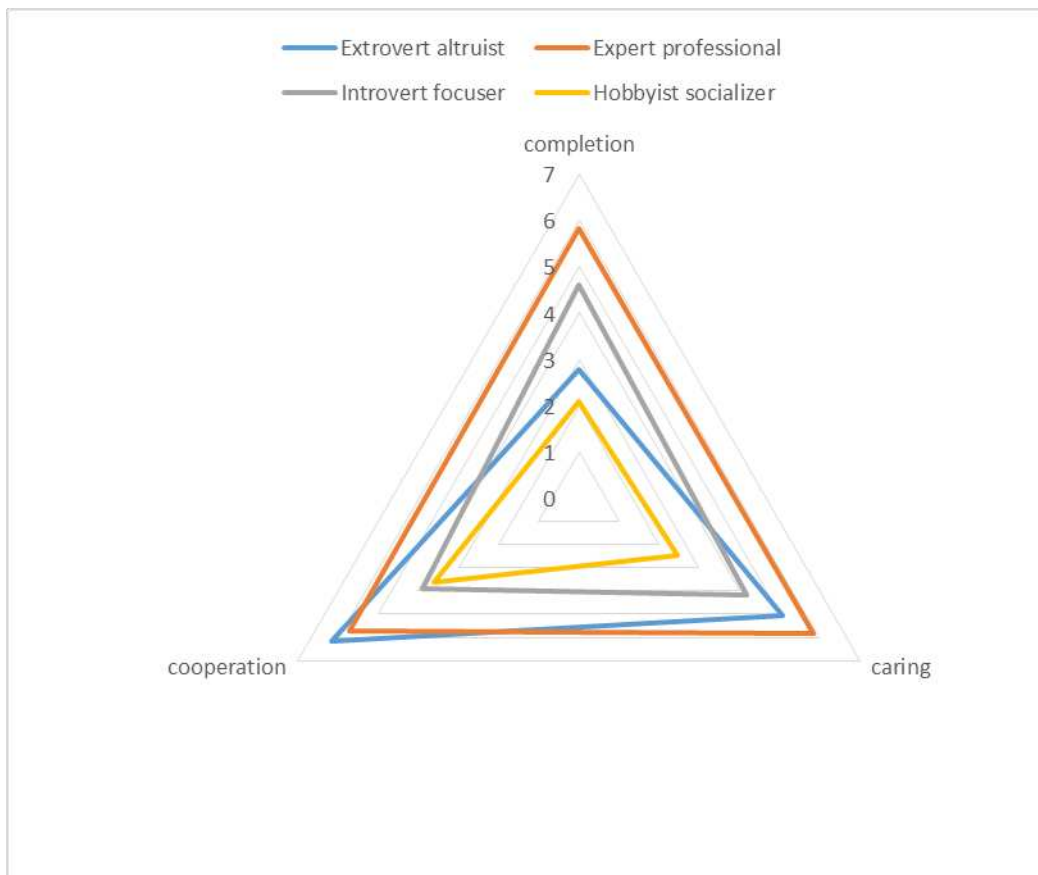
Figure 2 Typology of collectors defined by their liking for collecting behavior traits