2011

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Family Business Review

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What is This?

The Landscape of Family Business Outcomes: A Summary and Numerical Taxonomy of Dependent Variables

Andy Yu[1], G. T. Lumpkin[2], Ritch L. Sorenson[3], and Keith H. Brigham[4]

Abstract

To promote theoretical development in family business research, this research identified 327 dependent/outcome variables used in 257 empirical family business studies in 1998-2009. In four studies, the authors categorized outcome variables, developed a numerical taxonomy with seven clusters (performance, strategy, social and economic impact, governance, succession, family business roles, and family dynamics) plotted along two dimensions (business–family and short-term–long-term), validated their research, and identified missing outcome variables and variables that deserve more attention. Experts agree that family business roles, succession, and family dynamics make the family business domain unique and that noneconomic performance and family-specific topics deserve more attention.

Family business is arguably *the* predominant form of business (Anderson & Reeb, 2003; Chrisman, Chua, & Litz, 2004). Not surprisingly, interest in family business as an arena of academic research has grown in recent years (Bird, Welsch, Astrachan, & Pistrui, 2002; Dyer & Sánchez, 1998; Zahra & Sharma, 2004). The result has been a dramatic increase in family business studies and a rapid accumulation of new knowledge about the family business domain (Sharma, 2004). There seems to be general agreement that what makes family business unique is the interaction of the family with business management and ownership regimes (e.g., Gersick, Davis, Hampton, & Lansberg, 1997; Taguiri & Davis, 1992). However, after 25 years of progress, the field of family business continues to evolve, and its nature as a research domain continues to be clarified and articulated (Moores, 2009).

A key question in the ongoing development of the field revolves around the issue of what makes the family business domain distinctive. Many scholars have contributed to understanding the unique nature and boundaries of the domain (e.g., Aldrich & Cliff, 2003; Chua,

Chrisman, & Sharma, 1999; Distelberg & Blow, 2011; Habbershon & Williams, 1999; Lee & Rogoff, 1996; Zahra, Hayton, & Salvato, 2004). However, few advances in rigorous theory building are evident (Zahra & Sharma, 2004). Chua, Chrisman, and Steier (2003) suggest that identifying dependent variables is critical for the development of theoretical knowledge in the field. In conceptual models and empirical tests, the family business outcomes that researchers investigate are represented by the dependent variables. Unless key dependent variables are set forth and the outcomes that family businesses are striving toward are specified, progress toward theoretical

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development in family business research will be limited (Chua et al., 2003).

To advance understanding in the field, this article investigates dependent variables and outcome measures found in family business research between 1998 and 2009. Specifically, we seek answers to the following questions: (a) What dependent variables are currently used in family business research, and which ones are unique to the domain? (b) What are the relationships among those dependent variables? (c) What dependent variables are missing from family business research or deserve more attention? With these questions, we look at both the recent past (dependent variables from 1998-2009) and the near future (dependent variables likely to be included in future research) to gain insights aimed at building new knowledge and supporting theoretical development of the field. To address these questions, we undertook a series of studies to first identify dependent variables and outcome measures,[1] and then condense them into dependent variable categories using multidimensional scaling (MDS) and hierarchical cluster analysis (HCA). Feedback from family business researchers, owner-managers, and advisors was used to further refine and validate our findings, and to help us assess dependent/ outcome variables that are unique, missing, or deserve more attention in future family business research.

Our research contributes to the family business literature in multiple ways. First, it outlines the recent evolution of the family business domain in terms of its dependent variables, including the most and least researched variables over a 12-year span. Second, queries of experts help to identify dependent variables that are missing or underrepresented in recent family business research. Third, the research reveals an array of relationships among dependent variables that may prompt researchers to ask new questions. Finally, our research helps to summarize, organize, and visualize dependent variables in a way that may promote discussion among scholars and build consensus that advances development of the family business domain.

Gaining Insights From Dependent Variables

The three-circle model of family business (Gersick et al., 1997; Taguiri & Davis, 1992) is a widely accepted approach to depicting the family business domain. The model features three overlapping circles—the

business, the family, and the owners—that interact to influence a family business. One limitation of the three-circle model, however, is that it does not specify dependent variables. According to Chua et al. (2003), knowledge of dependent variables is critical for advancing theoretical development in family business because it is needed

> to examine the efficacy of family business decisions, actions, organizational structure, strategies, exploitation of resources, and so forth since such efficacy can only be evaluated in terms of achieving the goals and objectives set by the family for the firm. (p. 332)

Indeed, dependent variables help define a domain's boundaries. For example, financial performance is one of the defining outcome variables in strategic management (e.g., Ketchen, Thomas, & McDaniel, 1996; Nag, Hambrick, & Chen, 2007), and opportunity recognition is regarded as a core outcome in entrepreneurship (e.g., Busenitz et al., 2003; Short, Ketchen, Shook, & Ireland, 2010). By looking at its critical dependent variables, scholars in the family business discipline can gain a deeper understanding of the scope and distinctiveness of the field. Reviewing dependent variables can also reveal beliefs about the family business domain and its current stage of development. Using Kuhn's (1970) framework for scientific evolution, Moores (2009) suggests that the family business field has achieved paradigm consensus and is now in the normal science stage where, "to evolve further requires a robust theory building approach" (p. 170). Consistent with Chua et al.'s (2003) view that knowledge of dependent variables is needed to advance theory building, our article focuses attention on the outcomes that family business researchers care about to help them integrate and articulate the dominant beliefs that delineate and shape the field.

To conduct this research, we begin by using an inductive, problem-driven approach to identify dependent variables (Stokes, 1997). In so doing, we aim to create a context in which multiple perspectives can be used to take stock of a key issue in a domain—its dependent variables—and thereby advance scientific knowledge (Shapin, 1995). G. F. Davis and Marquis (2005) distinguish between a problem-driven approach and a paradigm-driven approach, which could be used to identify dependent variables, as follows:

[P]roblem-driven work is distinguished by its orientation toward explaining events in the world—starting with the question, 'why is it that . . . ?' Paradigm-driven work, in contrast, begins with hypotheses deduced from theory intended to be general. Events in the world are primarily contexts for testing those hypotheses in paradigm-driven work. (p. 334)

Given that family business researchers have many "why is it that . . . ?" questions, we believe a problem-driven approach can help researchers articulate concerns and issues that make the field unique. In place of trying to identify the appropriate dependent variables for extant theories, we simply sought to assemble, categorize, and reveal relationships among the dependent variables used in family business research. Although we could have studied independent, moderator, mediator, or other variables, we focus only on outcomes or dependent variables in this study because, according to Sekaran (2002, p. 92), "the dependent variable is the variable of primary interest to the researcher." Hence, to enhance understanding of the domain, we focus our inquiry on dependent variables and the relationships among them.

The approach we use to classify and organize dependent variables into a systematic framework is called "numerical taxonomy" (McKelvey, 1982, p. 13). The term *numerical* refers to the statistical techniques that are used to organize dependent variables into clusters; the term *taxonomy* refers to the inductive nature of our approach. The terms *taxonomy* and *typology* are often mistakenly used as synonyms (Priem, Love, & Shaffer, 2002). McKelvey (1982) indicates that the main differences are that a typology is deductive and monothetic while a taxonomy is inductive and polythetic. A typology (e.g., a two-by-two matrix) is a theoretical classification system working from the general to the particular and formed by relatively few attributes. A taxonomy, by contrast, is an empirical classification system working from the particular to the general, so that each class member possesses most of the characteristics of that class, but not all the members have the same full set of properties. According to McKelvey (1978), using multivariate statistics to develop a numerical taxonomy is an objective and systematic way to develop groupings (see McKelvey, 1978, 1982, for more information).

Method and Results

The purpose of this research is to improve our understanding of the family business discipline by examining the dependent/outcome variables used in recent family business research and the relationships among them. We also examine dependent/outcome variables that deserve more attention in future family business research. To accomplish our purposes, we completed four studies; to conduct these studies, we followed Priem et al.'s (2002) procedure for developing a numerical taxonomy by first identifying a comprehensive set of *dependent/outcome variables*, then condensing them into *categories* and finally grouping them into *clusters*.

In Study 1, we gathered and categorized a comprehensive set of dependent variables. The dependent variables were obtained from published studies between 1998 and 2007. After the dependent variables were identified, a modified Delphi procedure (Dalkey, 1969; Reger & Palmer, 1996; Short & Palmer, 2003) was used by three of the authors to generate 34 dependent variable categories. Two years after the first draft of this article had been generated, a second and supplemental set of dependent variables was identified and categorized for studies published during 2008 and 2009. The new set made our analysis more current and helped validate the categories developed from the first set. Our assumption was that reviewing dependent variables over the most recent 12-year period would be sufficient to reflect the current evolution of the family business discipline.

In Study 2, we invited experts to judge similarities and differences among the 34 dependent variable categories identified in Study 1. Data collected from 22 family business scholars (Sample 1) were coded and entered into a MDS analysis and HCA—statistical clustering techniques used to inductively classify the dependent variables—that organized the 34 dependent variable categories into clusters in a two-dimensional space. The result of these analyses was a numerical taxonomy (McKelvey, 1978, 1982), which we describe below. To validate the numerical taxonomy, we asked another group of family business experts (31 family business scholars—Sample 2) to rate similarities and differences among the dependent variable clusters. Analyses of variance were used to validate the numerical taxonomy.

In Study 3, we further refined and validated the labels for the dependent variable categories and clusters in Studies 1 and 2. The authors met with a multi-stakeholder group consisting of 23 family business owners, advisors,

Table 1. Samples of Expert Raters

	Participation	Description	Response rate (in %), No. Participated/Solicited
Sample 1	Study 2, Study 4	Family business scholars (based in the United States)	73.3, 22/30
Sample 2	Study 2, Study 4	Family business scholars (global)	59.6, 31/52
Sample 3	Study 3	Family business owners (8) Family business advisors (8) Family business scholars (7)	79.3, 23/29
Sample 4	Study 3	Family business advisors	58, 19/33

and scholars (Sample 3) to present the findings of the first two studies. After an extensive 8-hour discussion with the multi-stakeholder group and additional meetings among the authors to review the dependent variable categories and cluster labels, the authors refined some of the labels to more accurately reflect the dependent variables they represented. To validate the changes, we surveyed a group of 19 family business advisors (Sample 4) to assess whether those refined labels more accurately represented the dependent variable categories and clusters we identified.

In Study 4, we summarized questionnaire data gathered from two panels of family business researchers (Samples 1 and 2) to identify important dependent variables that are missing in current research and dependent variables that deserved more attention. Table 1 summarizes the different expert panels we relied on for these studies.

Study 1: Identify and Categorize Dependent Variables

For the first study, we gathered and categorized dependent variables in family business scholarly research during two time periods: 1998-2007 and 2008-2009.

Empirical research from 1998 to 2007: Article selection. The purpose of our review was not to provide an exhaustive list of empirical family business studies but to understand the current evolution of the field as reflected in recent studies (1998-2007) in the most rigorous and influential journals. We defined "empirical studies" as data-based research designed to test research questions or propose propositions/models using quantitative and/ or qualitative data (Colquitt & Zapata-Phelan, 2007). For the purpose of this research, we included empirical studies in the family business literature containing dependent/outcome variables and thus excluded literature

reviews and articles focused on education, consulting experience, general commentary, and so forth.

Consistent with previous studies (e.g., Sharma, 2004), we assumed that 10 years of data would provide a representative sample of dependent variables. The beginning of the time frame for our research (1998) corresponded with the period following Gersick et al.'s (1997) explication of the three-circle model and Dyer and Sánchez's (1998) review of *Family Business Review* (*FBR*) articles. However, our research was not designed to test the three-circle model or to be an extension of Dyer and Sánchez's review, which provided insightful observations on authorship, topics, and implications of articles. Specifically, unlike Dyer and Sánchez's research, our project focused narrowly on dependent variables and included nine high-quality journals in addition to *FBR* that publish family business research: *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Journal of Small Business Management*, *Academy of Management Journal*, *Organization Science*, *Journal of Management Studies*, *Journal of Management*, and *Administrative Science Quarterly*.

In our search for empirical studies between 1998 and 2007, we used first broad and then narrow keywords (Morris, 1994) to search empirical family business articles in the nine journals identified above. During the search process, we used "family" and found 711 articles, then "family business" (536), "family firm" (348), "family enterprise" (142), and "home-based" (12). Five electronic databases were used, including EBSCOhost, ABI/INFORM Global, SAGE Journals Online, Wiley InterScience, and ScienceDirect. The lead author conferred with two coauthors to finalize article inclusion. In total, the data set included 212 empirical articles.

Empirical research from 1998 to 2007: Modified Delphi procedure. The next step was to generate a coding sheet to systematically code the 212 articles and their content,

such as year, author, title, dependent variables, and so on. As a result of the coding, 259 specific dependent variables were identified indicating that in some cases, one article included two or more dependent variables for model testing. For instance, Sorenson (2000) tested the relationships between leadership styles and four dependent variables, including employee satisfaction, employee commitment, business (financial) outcomes, and family outcomes.

The 259 dependent variables were then categorized using a modified Delphi procedure (Dalkey, 1969; Reger & Palmer, 1996; Short & Palmer, 2003). The modified Delphi procedure is an appropriate method to reduce data and produce abstract categories. Lee (1999, pp. 89-90) called this mode of data analysis "meaning condensation," and suggested the analysis is parallel with "a statistical factor analysis." In the first step of the procedure, raters separately and independently generated possible categories for the 259 dependent variables. The raters worked independently to avoid potential biases contaminating independent judgment, such as dominance by power or politics. Three members of the author team participated in the categorization. Then, we held a series of meetings aimed at converging on a consensus set of categories.

During the first round, through successive iterations, we discussed possible overarching categories from the dependent variable list. For example, the category "family involvement in business" includes several dependent/outcome variables, such as "next generation's intention to join the family business," "familiness," "family business concerns," and so on. The procedure allowed for the possibility that a category might include several dependent variables and that one dependent variable might possibly fit multiple categories. In the following rounds, the categories that reached full consensus were retained. Following this, each evaluator independently reanalyzed those categories and outcome variables that received partial or no agreement, and the procedure was repeated. The constraint was that we could add dependent variables to those agreed-on categories in the first round, create new categories, or judge some dependent variables to be idiosyncratic, but we could not change the labels of agreed-on categories or move dependent variables agreed on in previous rounds.

We repeated this procedure until we acknowledged no further possible convergence. That is, all 259 dependent variables identified in the 212 articles were assigned to one of the final 34 dependent variable categories. Table 2 lists the 34 categories; Appendix A provides exemplar dependent variables in each category.

Supplemental search (2008-2009) and dependent variable categories validation. After we had generated the initial taxonomy using the 1998-2007 data, we collected two additional years of dependent variables (2008 and 2009) to update our analysis and to validate the 34 dependent variable categories. Following the same rationale as in Study 1 to screen articles, we identified 68 dependent/outcome variables in 45 empirical family business studies from the 9 journals. We found that no new categories were required to classify the dependent/outcome variables found in the 2008-2009 articles. In total, between 1998 and 2009, 327 dependent/outcome variables in 257 published articles were identified and reviewed in this study.

Study 2: Reveal Relationships Among Dependent Variable Categories

After the dependent/outcome variables had been categorized, we sought to determine the relationships among the categories by using MDS and HCAs to derive a numerical taxonomy.

Numerical taxonomy formation: Procedure. In developing the numerical taxonomy, we used Priem et al. (2002) as a guide. They used a purposive sample of 19 executives to categorize sources of uncertainty. For our purposive sample, we invited 30 family business scholars (Sample 1) to categorize dependent variables, and 22 participated (73.3%). These social scientists, several of whom were drawn from the *FBR* editorial board, were experts who know the literature and help distribute knowledge (Shapin, 1995); many had years of family business consulting experience. Thus, they were in a strong position to evaluate categories and make judgments about outcome-related family business indicators.

We prepared a package of materials for our experts that included two tasks: a judgment task and a one-page survey. For Task 1 (judgment task), we sent each expert 34 index cards corresponding to the dependent variable categories identified in Study 1. We asked the experts to

> group the cards into as many groups as may be necessary to properly reflect the similarities and differences

Table 2. Dependent Variable Categories Identified by Modified Delphi Procedure[a]

No.	Label	Rank[b]	Frequency[c] (%)	Cluster[d]
C1	Family values	3	5.43	Family dynamics
C2	Professionalization of management	19	1.88	Succession
C3	Succession processes	15	2.51	Succession
C4	Succession plans	25	1.67	Succession
C5	Succession/transition events	7	4.38	Succession
C6	Role of spouse/copreneur	27	1.25	Family business roles
C7	Role of female family members	28	1.25	Family business roles
C8	Entrepreneurship	8	4.38	Social and economic impact
C9	Human resources	16	2.30	Governance
C10	Strategy content	13	3.13	Strategy
C11	Business mission/goals	20	1.88	Governance
C12	Investment policies	21	1.88	Strategy
C13	Financial structure	5	5.01	Strategy
C14	Role of network	26	1.46	Governance
C15	Decision making	2	5.64	Governance
C16	Governance structure	12	3.34	Governance
C17	Family control	22	1.88	Governance
C18	Satisfaction	23	1.88	Family dynamics
C19	Commitment	29	1.25	Family dynamics
C20	Internationalization	17	2.09	Strategy
C21	Conflict	14	3.13	Family dynamics
C22	Family ownership	9	3.97	Governance
C23	Compensation	31	1.04	Succession
C24	Social capital and knowledge transfer	24	1.88	Social and economic impact
C25	Economic contribution	30	1.25	Social and economic impact
C26	Attitude toward family business–nonfamily members	33	0.63	Family business roles
C27	Attitude toward family business–family members	32	1.04	Family business roles
C28	Attitude toward family business–CEO	34	0.63	Family business roles
C29	Family involvement in business	4	5.22	Family business roles
C30	Family business characteristics	6	4.59	Family dynamics
C31	Survival and growth	10	3.55	Strategy
C32	Performance-overall success	11	3.55	Performance
C33	Performance-financial	1	12.94	Performance
C34	Regulatory and business environment	18	2.09	Social and economic impact

a. C = Category. Names listed here reflect final validated labels (from Study 3).
b. Rank order of category in terms of frequency of use.
c. Frequency of use.
d. Cluster assignment based on cluster analysis (from Study 2).

among the dependent variable/outcome categories represented by the 34 cards. When finished, similar dependent variable/outcome categories should be grouped together, while dissimilar categories should be in different groups. (modified from Priem et al., 2002, p. 73).

Regarding Task 2, the one-page survey will be described in Study 4.

Numerical taxonomy formation: Statistical analyses. We employed MDS analysis and HCA to analyze the data collected from the card-sorting judgment task (Task 1). MDS and HCA were used in SAS 9.1 to analyze the

distance matrices gathered from the card-sorting activity. The data collected from each subject was directly coded into a dissimilar distance matrix. If the cards were in the same pile, their distance was coded as "0"; others were coded as "1."

Two assumptions guided our use of MDS and HCA. First, MDS and HCA are complementary approaches to obtaining a perceptual map (Priem et al., 2002; Shewchuk, O'Connor, Williams, & Savage, 2006). "The purpose of MDS is to determine the relative ordering of attributes along each decisional [underlying] dimension" and provides researchers with a visual map, while cluster (taxonomy) analysis serves to identify the homogeneous subgroups in a population, that is, minimizing the variation of within-groups and maximizing that of between-groups (Shewchuk et al., 2006, p. 1195). The advantage of this approach is that researchers can see the similarity/dissimilarity of clusters along different dimensions; the challenge is the interpretation of clusters and dimensions (Hair, Black, Babin, Anderson, & Tatham, 2006).

Second, both MDS and HCA relax the assumptions of data distribution and large sample size because of their nonparametric nature. The distance matrix derived from family business scholars reflected the perceptual similarity or dissimilarity of the 34 dependent variable/ outcome categories. Both analyses focused on how the subjects perceived the objects (dependent variable categories) as the unit of analysis, rather than on variables. Thus, even though the sample size was small, it was still robust for the purposes of this study (Hair et al., 2006; Shewchuk et al., 2006). As for the number of objects (dependent variable categories), Hair et al. (2006, p. 649) suggest "four times as many objects as dimensions desired (i.e., five objects for one dimension, nine objects for two dimensions, etc.) to obtain a stable solution." According to this principle, the 34 dependent variable categories (objects) were sufficient to support a maximum of eight dimensions.

In MDS, we used badness-of-fit in the output of the PROC MDS procedure to evaluate the fit of models. This is similar to the stress value in ALSCAL (an alternative least-square scaling procedure in SAS) and analogous to $\sqrt{1-R^2}$ value (Kruskal & Wish, 1978; SAS Institute, 1990). For instance, if the value of badness-of-fit (stress) is less than .2 and R^2 (RSQ) is greater than .85, these would provide sufficient explanatory power and parsimony for a two-dimensional map (McCain, 1990). In HCA, we used a scree plot and

Ward's linkage as well as other different linkage methods to validate the number of clusters. Meanwhile, we evaluated the value of cubic clustering criteria (CCC, Hair et al., 2006) in different methods to assess the variance explained by RSQ. Ketchen and Shook (1996) described CCC as "a measure of within-cluster homogeneity relative to between-cluster heterogeneity" (p. 466).

Numerical taxonomy formation: Model selection for multidimensional scaling. We first employed MDS analysis and got different dimensional solutions with different values of badness-of-fit, including one dimension (badness-of-fit = .12), two (.11), three (.11), four (.11), five (.10), and six (.09). All their badness-of-fit values were acceptable (Hair et al., 2006; McCain, 1990). According to a scree plot, using *X*-axis—representing the number of dimensions, and *Y*-axis—indicating the value of badness-of-fit, we chose the elbow (two dimensions) because of parsimony and interpretability (Hair et al., 2006). In terms of interpretability, one dimension was too simple to describe all the 34 dependent variable categories on a continuum. For parsimony (Kruskal & Wish, 1978), three- and four-dimensional maps were not better than the stress values of two dimensions. Five and six, although a better fit, were too complex to be explained.

In Figure 1, the two dimensions of the map were simply interpreted as outcome dimensions, anchored by *business* and *family* on the *X*-axis, and *short-term* and *long-term* on the *Y*-axis. The left side of the *X*-axis indicates business outcomes, and the right side represents family outcomes; the lower part of the *Y*-axis indicates short-term outcomes whereas the upper portion represents long-term outcomes. This two-dimensional solution provides a basis for plotting and identifying potential relationships among the 34 dependent variable categories. Because it resembled a topographical map, we labeled the figure the "The Landscape of Family Business Outcomes" and hereinafter sometimes refer to it as the "map."

On the left side of the *X*-axis, we observed 16 categories highly related to business issues, such as performance-financial and strategy content. These categories are important themes related to running the business subsystem (Gersick et al., 1997) and represent business outcomes. Conversely, on the right side of the *X*-axis, the 18 categories show different attributes containing more family outcomes, such as family values and family involvement in business.
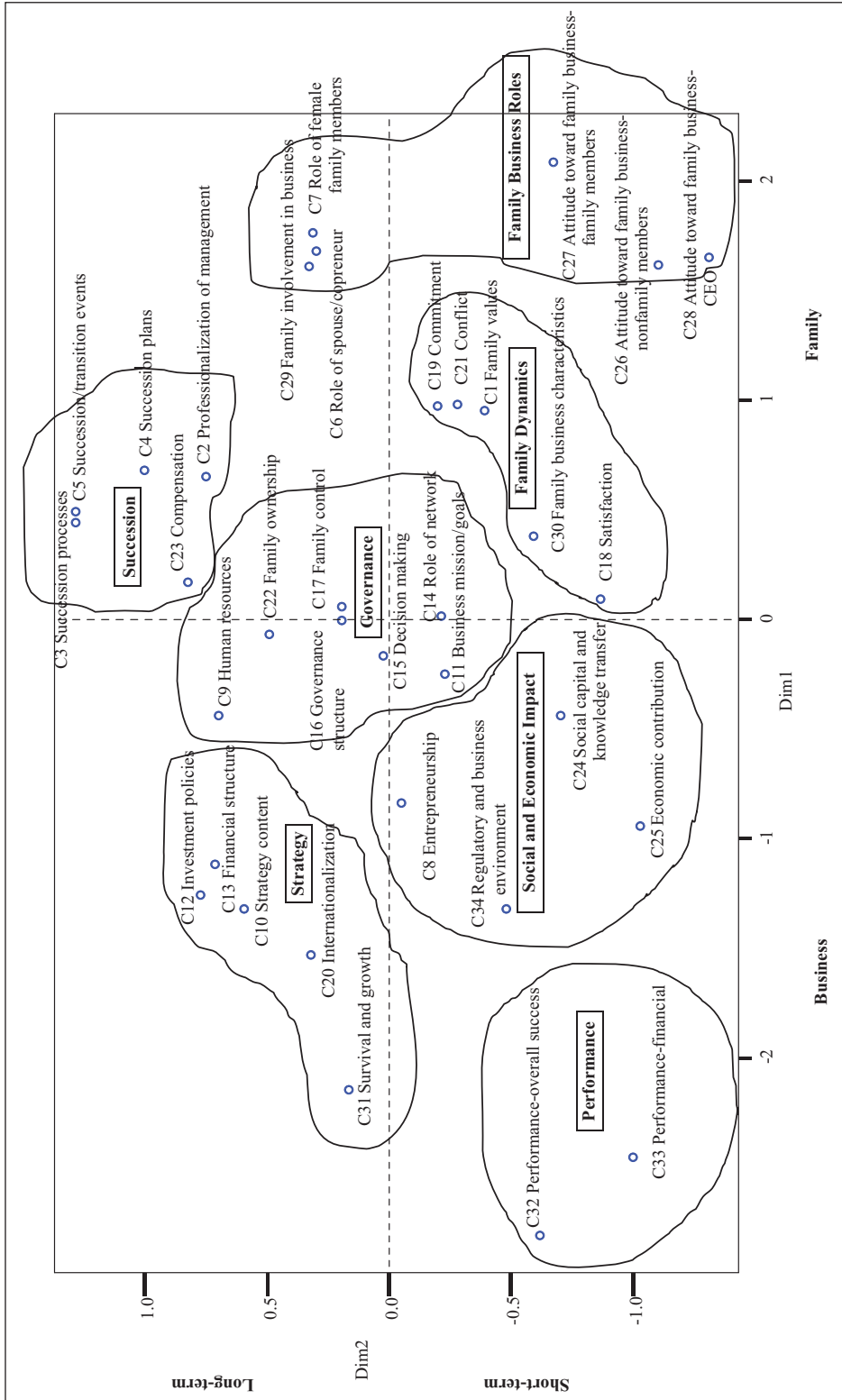
40

Figure 1. The landscape of family business outcomes

The figure is a two-dimensional map (Dim1 horizontal, ranging from about -2 to 2, labeled Business on the left and Family on the right; Dim2 vertical, ranging from about -1.0 to 1.0, labeled Long-term at the top and Short-term at the bottom) showing clusters of family business outcomes:

Succession
- C3 Succession processes
- C5 Succession (transition events)
- C4 Succession plans
- C2 Professionalization of management
- C23 Compensation

Strategy
- C12 Investment policies
- C13 Financial structure
- C10 Strategy content
- C20 Internationalization
- C31 Survival and growth
- C9 Human resources

Governance
- C22 Family ownership
- C17 Family control
- C16 Governance structure
- C15 Decision making
- C14 Role of network
- C11 Business mission/goals

Family Dynamics
- C19 Commitment
- C21 Conflict
- C1 Family values
- C30 Family business characteristics
- C18 Satisfaction

Family Business Roles
- C29 Family involvement in business
- C7 Role of female family members
- C6 Role of spouse/copreneur
- C27 Attitude toward family business-family members
- C26 Attitude toward family business-nonfamily members
- C28 Attitude toward family business-CEO

Social and Economic Impact
- C8 Entrepreneurship
- C34 Regulatory and business environment
- C24 Social capital and knowledge transfer
- C25 Economic contribution

Performance
- C32 Performance-overall success
- C33 Performance-financial

With respect to the second outcome dimension (*Y*-axis), the 16 categories on the lower portion of the map reflect short-term outcomes. These categories emphasize more immediate outcomes, such as financial performance (which is often measured monthly or quarterly) and individual psychometric outcomes, including satisfaction and attitudes. The upper part of the *Y*-axis, by contrast, reflects long-term outcomes. These often represent more complex intertemporal choices where the payoffs play out over longer periods. Examples include strategy content and investments, which involve a more forward-thinking component. Also, succession plans and processes and family roles in the business are congruent with a long-term perspective.

Numerical taxonomy formation: Model selection for HCA. Several principles, including statistical evidence, scree plot and dendrogram analysis, and the ease of interpretation, were used to evaluate the HCAs (Hair et al., 2006). Seven clusters were identified using Ward's linkage method because it is more reliable among the different algorithms (Milligan, 1980). Unlike nonhierarchical cluster analysis, HCA was appropriate for a smaller sample size (Hair et al., 2006). For the validity of clusters, Priem et al. (2002) suggested using linkage methods to fit the same matrices and to observe the stability of the number of clusters. As mentioned, we employed RSQ and CCC as the major criteria to evaluate different algorithms (Hair et al., 2006; Ketchen & Shook, 1996). The judgment rule for RSQ is that its value should be higher than ERSQ's (expected R^2); the judgment rule for CCC is that the values between 2 and 3 indicate good clusters, and those between 0 and 2 indicate potential clusters. Separately, Ward's average, complete, centroid, and single linkage methods were all tested. Using RSQ and CCC criteria, the results consistently suggested seven clusters across different methods. The seven-cluster solution explained 89.2% of variance by its RSQ. Figure 1 represents the seven classifications and their related dependent variable categories. Appendix A lists the 34 categories (C = category) by cluster.

The seven clusters. Of the seven clusters, three clusters are more business oriented, three are more family oriented, and one is at the center of this perceptual map. With regard to business-oriented clusters, Cluster 1, labeled "performance," includes performance-overall success[2] (C32) and performance-financial (C33). It refers to the effectiveness of the family business system. The means of this cluster are −2.61 on the *X*-axis

(Dimension 1: business and family) and −0.81 on the *Y*-axis (Dimension 2: short-term and long-term). The performance category is squarely in the business and short-term quadrant of the map.

Cluster 2, labeled "strategy," is defined as policies and plans enacted by the family business. The strategy cluster includes strategy content (C10), investment policies (C12), financial structure (C13), internationalization (C20), and survival and growth (C31). The cluster means are −1.36 on the *X*-axis and 0.5 on the *Y*-axis. The strategy cluster is distinctly located in the business and long-term quadrant of the map.

Cluster 3 is composed of entrepreneurship (C8), social capital and knowledge transfer (C24), economic contribution (C25), and regulatory and business environment (C34). The means on the two dimensions are −0.86 (*X*-axis) and −0.58 (*Y*-axis), and this cluster is skewed toward the business and short-term anchors. Because these categories include interaction with the environment and influences on society and the economy, this cluster was labeled "social and economic impact," defined as the reciprocal exchanges between the family business and its business environments.

Cluster 4 includes categories suggestive of the indispensable routines, structures, and mechanisms needed to bridge both family and business outcomes. Interestingly, it is positioned at the heart of the map, spanning all four quadrants, where such integration is likely to take place. The mean scores are near the center of the two dimensions (−0.10, 0.15). We labeled this cluster "governance," referring to decision processes and control mechanisms that balance the needs of the family system and the business system. Governance consists of human resources (C9), business mission/goals (C11), role of network (C14), decision making (C15), governance structure (C16), family control (C17), and family ownership (C22).

The rest of the clusters (5, 6, 7) are more family outcomes–oriented. Cluster 5 consists of professionalization of management (C2), succession processes (C3), succession plans (C4), succession/transition events (C5), and compensation (C23). The means of the two dimensions—0.51 and 1.21—place this cluster completely in the family and long-term quadrant of the map. Because these outcome categories are highly related to the issue of "passing the baton" to the next generation, it was labeled "succession," defined as the success and sustainability of family business over the long run.

The means for Cluster 6 are 1.76 and 0.38. The categories in this cluster consist of role of spouse/copreneur (C6), role of female family members (C7), attitude toward family business–nonfamily members (C26), attitude toward family business–family members (C27), attitude toward family business–CEO (C28), and family involvement in business (C29). This cluster represents different roles and attitudes of different stakeholders of a family business, and thus was named "family business roles," defined as roles and attitudes of family business members and nonmembers. The plot of this cluster indicates that it is the most family oriented of all of the clusters. However, the cluster spans a wide range of the *Y*-axis, representing both short- and long- term concerns.

Finally, family values (C1), satisfaction (C18), commitment (C19), conflict (C21), and family business characteristics (C30) are grouped to form Cluster 7 (cluster means: 0.7 and −0.48). This cluster represents the relationships, values, and characteristics that a family desires from its business, and thus was labeled "family dynamics," defined as the interactions and aspirations of family members. This cluster is skewed toward the family and short-term anchors.

Numerical taxonomy validation: Procedure. After completing statistical analyses and agreeing on labels for the two dimensions and the seven clusters in the numerical taxonomy, we prepared an online survey to validate the taxonomy and solicit more insights. The first part of the survey focused on the numerical taxonomy. Following a design similar to Priem et al. (2002), participants rated the degree to which each of the seven clusters related to its dependent variable categories using a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). The second part of the questionnaire included two open-ended questions and will be described below in Study 4.

The subjects for the validation study included 52 global scholars (Sample 2) in various research areas, such as entrepreneurship, psychology, strategic management, economics, communication, marketing, accounting, finance, management information systems, technology/innovation management, family therapy, philosophy, and so on. Some served on the editorial review board of *FBR*, and some were attendees of the 2008 Family Enterprise Research Conference (FERC). From the population of authors who publish family business–related academic research, this group was viewed as a diversified holdout sample chosen to validate the results of the numerical taxonomy and

potentially provide additional insights (Hair et al., 2006). The response rate was about 59.6% (31/52).

Numerical taxonomy validation: Results. To test the validity of the seven clusters, we employed analyses of variance (ANOVAs) to detect differences in the data collected from the holdout sample. In the first test, we used a paired sample *t* test to examine whether a cluster was generally different from the average of the other six clusters. The results demonstrated that the discriminations among these seven clusters were statistically significant at the $p < .001$ level. The second, more specific tests, including ANOVAs and pairwise comparisons, were then used to identify the sources of differences. All the clusters were statistically and significantly different between the levels of $p < .001$ and of $p < .05$, except the two pairs: (a) succession versus governance and (b) family dynamics versus family business roles. Therefore, we tested the scores of the two reverse questions (governance vs. succession; family business roles vs. family dynamics), and the results were then significant at $p < .001$ level. Overall, the results from the two tests support discrimination among the seven clusters.

Study 3: Refine and Validate Dependent Variable Categories and Cluster Labels

Although the numerical taxonomy seems empirically and statistically sound, the labeling of categories, clusters, and dimensions requires considerable judgment. The labels must both represent dependent/outcome variables and be meaningful to researchers and practitioners. We recognized that there is a level of inherent subjectivity in interpreting the numerical taxonomy (Hanks, Watson, Jansen, & Chandler, 1994). Therefore, after providing our initial labels, we sought the input and perspectives of other researchers and practitioners. One of the authors organized a conference to critique, review, and, if necessary, refine the labels for various components of the Landscape of Family Business Outcomes.

Label refinement procedure. Together with two other scholars, the four authors of this article each presented a paper about the findings of Studies 1 and 2 at a conference convened at the University of St. Thomas in Minneapolis in September of 2010. Of the 29 family business owners, advisors, and scholars who were solicited to participate, 23 attended a day and half of presentations and discussions aimed at critiquing and reflecting on the

dependent variable map (Sample 3). Following the conference, the author team immediately conferred to capture insights developed during the conference. We concluded that some of the cluster and category labels might be modified to more accurately represent the dependent variables and their meaning. We reexamined the categories/clusters and their labels in two additional meetings. We agreed to make 17 label changes, three of which were minor edits to make some labels plural instead of singular (e.g., succession plans instead of succession plan).

Label validation procedure. To validate our refinements, we conducted another assessment using a group of family business advisors (Sample 4). Among the 33 who agreed to participate, 19 advisors from the fields of family development, finance, accounting, and law contributed to the assessment. They were given copies of the Landscape of Family Business Outcomes, a summary of the dependent variables grouped within their categories and a questionnaire asking them whether they preferred the original label, the proposed label, or "makes no difference." In only one case—regulatory and business environment—did the advisors prefer the original label, so that label was retained. Thirteen category labels were changed, and three other labels received minor edits. Appendix A lists the original category labels.

Three changes were made to cluster labels. Because the cluster label "environment" seemed overly abstract and not descriptive of family business influence, it was changed to "social and economic impact." Because the cluster label "family outcomes" did not capture family interaction, values, and attitude, it was changed to "family dynamics." Because the cluster label "family roles" did not clearly emphasize the family business context, it was changed to "family business roles."

The labels provided in Figure 1 are the final labels that emerged from the conference, the multiple author team meetings, and the assessment of the holdout group (Sample 4). For more explanation of the rationale for label changes, please contact the lead author.

Study 4: Identify Missing Dependent Variables in Existing Research

A principal objective of our research was to identify dependent variables (a) that are unique to the domain, (b) that are "missing", and (c) that deserve more attention in future family business research. With Task 2 (one-page survey), we queried the two samples of family business experts (Sample 1, *n* = 22; Sample 2, *n* = 31) described in Study 2 to help us investigate these questions. Sample 1 was invited to address all three questions, and Sample 2 was invited to answer only the second and third questions in the survey.

Procedure and results. After completing the initial judgment task in Study 2, Sample 1 (*n* = 22) respondents were asked, "Using the 34 categories below, which dependent variable/outcome categories do you believe distinguish the family business domain from other research domains? Please check all that apply." The top 5 categories are reported below (together with the dependent variable category number, and the number and percentage of experts who felt the dependent variable category distinguished the family business domain).

1. Family involvement in business (C29, 22/22, 100%)
2. Family values (C1, 20/22, 90.9%)
3. Family business characteristics (C30, 20/22, 90.9%)
4. Attitude toward family business–family members (C27, 19/22, 86.4%)
5. Succession processes (C3, 17/22, 77.3%)

The complete list of answers is tabulated and reported in Appendix A.

Anticipating that not all dependent variables would be included in our set, we asked family business experts (both Samples 1 and 2) in Study 2, two additional questions. We used content analysis to summarize the answers to the questions. Appendixes B and C provide summaries of answers to the research questions.

First, we asked, "In your opinion, were any dependent/outcome variable categories unaccounted for in our set? In other words what, if anything, is missing?" The experts identified several missing dependent variables, such as "affinal ties," "longevity," "family goals and outcomes," and "socioemotional wealth." Missing dependent variables related to business were "legal issues," "job creation," "exit strategies," "productivity," "industry situation," "anticipated growth (sales and revenue) and employee growth," and "new product success," just to name a few. See Appendix B for a complete listing.

Then we asked our two expert panels, "In general, what outcome variables (either in the above list or otherwise)

deserve more attention in future family business research? Why?" Here is a representative sampling of their responses:

- "non-economic goals . . . of family firms"
- "nonfinancial performance, as a dependent variable that explains family firm behavior, such as, long-term orientation"
- "family outcomes and socioemotional wealth"
- "family harmony (on the family side)/business profitability (on the business side)"
- "both financial and nonfinancial variables listed above deserve attention. Family businesses cannot survive without financial success. At the same time, financial success is not the only goal of most family businesses."
- "in my opinion, all outcome variables in which the 'family' dimension is explicit deserve more attention"

In general, family outcomes and noneconomic performance are the areas that family business experts mentioned most frequently as deserving more attention in future research. See Appendix C for a complete summary.

Discussion

The domain of family business has been discussed since the first issue of *FBR* in 1988 (e.g., Lansberg, Perrow, & Rogolsky, 1988). Since then, family business research has expanded significantly, and the field has evolved. This research adds clarity to the current stage of the field's evolution by summarizing dependent variables currently used in research, revealing relationships among those dependent variables, and providing insights about dependent variables that may be unique to family business or underrepresented in extant research. Below, we discuss answers to three research questions and implications of our findings.

> *Research Question 1:* What dependent variables are currently used in family business research, and which ones are unique to the domain?

Our first research question was designed to determine what researchers currently believe are the important and unique dependent variables in family business. Our efforts were motivated in part by a problem-driven approach to research (Davis & Marquis, 2005) aimed at

identifying the topics and concerns that family business researchers have focused on in recent empirical studies. It is worth noting that many of the dependent variables/outcomes we investigated are associated with theoretical frameworks that are prominent in family business research, such as agency theory (e.g., Schulze, Lubatkin, Dino, & Buckholtz, 2001), identity theory (e.g., Foreman & Whetten, 2002), network theory (e.g., Kelly, Athanassiou, & Crittenden, 2000), and Bowenian family theory (cf. Lumpkin, Martin, & Vaughan, 2008) to name only a few. These clear links to theory suggest that paradigm-driven approaches already play a vital role in family business research. Nevertheless, given the current stage of development of the family business field, new theory building is needed to further define the domain (Moores, 2009). Hence, our goal was to catalog and organize dependent/outcome variables as a way to analyze the range of problems and current themes that family business researchers are investigating. By focusing on concerns and events that family business researchers have sought to understand in recent studies, we have helped identify important topics for advancing theoretical development of the field.

To identify the dependent variables, we collected 259 dependent variables from 212 articles that appeared in articles from 1998 to 2007. Using a modified Delphi procedure, we condensed those dependent variables to 34 dependent variable categories. We then analyzed two additional years of research (2008-2009); dependent variables identified during the second data collection all fit into one of the existing 34 categories. Our final total sample included 327 dependent variables from 257 articles. Table 2 lists the 34 dependent variable categories and indicates the frequency with which individual dependent/outcome variables were assigned to that category; Appendix A provides examples of the dependent variables that were categorized. Although the list does not purport to include all dependent variables in the family business field, it does provide a good representation of those variables used in recent family business research.

The dependent variable categories reveal researchers' beliefs about potentially important outcomes in family business. We were frankly surprised at the wide array of dependent/outcome variables found during the 12 years we studied and the breadth of dependent variable categories that emerged from the modified Delphi process. Rather than identifying a cohesive set of distinctive dependent variables, the analysis revealed a striking

"landscape" of topics. From the perspective of outcome variables, the family business field has clearly not yet converged around just a few dependent variables.

What appears to be happening instead at the current stage of development is that family business researchers are exploring and defining the effects of family ownership on a range of different outcomes. Several elements of this research support that conclusion. First, unlike many established business disciplines that tend to investigate how an array of independent variables are related to a few dependent variables, the family business discipline seems to be focused on how a few independent variables are related to many dependent variables.

Second, most of the dependent variable categories that our expert panels identified as distinctive tend to be researched as independent or control variables. Yet the family business researchers in this study have turned that around and, in general, seem to be asking, "What influence does family ownership have on these unique elements of a family business—family involvement in business, family values, family business characteristics, attitude of family members toward the family business, succession, and so forth.

Third, the list of most frequently researched topics (Table 2) indicates that performance-financial is the top category by a large margin. Yet, at only 12.94%, it suggests that family business researchers are also seeking insights into the effects of family influence on a rather wide variety of outcomes when compared with other business disciplines (e.g., strategic management). Over time, researchers may coalesce around a more limited set of outcomes. For now, the family business discipline seems to be exploring the effects of family ownership.

How might this observation be used to establish the distinctiveness of the family business field? Because family business is embedded within the larger business domain, it might benefit from examining relationships between more generic business variables and more family business–specific variables. For example, researchers could explore the impact of generic independent variables obtained from other disciplines on family business–distinctive dependent variables (e.g., strategic planning on family continuity or dividend policy on family harmony/conflict). Alternatively, scholars could examine the influence of family business–distinctive independent variables on generic dependent variables (e.g., how family members on boards of directors influences debt vs. equity capital strategies or how different

generations of ownership affect firm-level risk aversion). Such inquiries could prove fruitful for advancing theoretical development of the family business domain. However, even in the long term, the family business discipline may distinguish itself by having relatively few independent variables and many dependent variables.

Another approach to exploring family business outcomes more effectively would be to investigate a more broadly defined performance metric rather than focusing solely on financial performance. The category "performance-overall success" is suggestive of this broader approach as it includes variables that may distinguish family from other businesses, such as familiness, long-term growth, sustainability, and socioemotional wealth (see Appendix B). These categories suggest that outcomes, such as family outcomes (Taguiri & Davis, 1992) and socioemotional wealth (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007) are important for distinguishing the family business domain. As reported earlier, a preponderance of experts identified noneconomic goals and nonfinancial performance as among the primary areas that deserve greater attention in future family business research. Considering the breadth of dependent outcomes/variables identified in this research and the number of them focused on elements of family ownership, there appears to be a clear opportunity for the family business field to take a leading role in identifying theoretical frameworks and research designs that combine financial and nonfinancial outcomes into measures of overall success.

Notice that succession, as a dependent variable, may no longer hold the research prominence that it once had (see Dyer & Sánchez, 1998; Sharma, Chrisman, & Chua, 1996) even though it is still a defining feature of family business. Furthermore, while researchers are focusing on some areas that are unique to the domain, other topics that make family business research distinct, such as attitude toward the family business from different stakeholders (family members, nonfamily members, and CEO), are less frequently researched. Economic contribution, compensation, and attitude toward family business (family members, nonfamily members, and CEO) are the least studied categories. These may become more prominent at a future date, but at this stage of development of the field, the dominant trend is toward the exploration of the impact of an independent variable (e.g., family ownership) on a variety of outcomes.

Research Question 2: What are the relationships among the dependent variables?

To answer this question, we gathered assessments from experts in family business about similarities among categories, which enabled us to analyze relationships among those categories using MDS and HCAs, as described in Study 2. These analyses yielded a numerical taxonomy of experts' perceptions about dependent/outcome variable categories, which clustered the categories to reflect experts' collective views of the relationships among these categories. This process resulted in a visual summary of categories that we labeled the "Landscape of Family Business Outcomes." The numerical taxonomy provides useful insights into how family business researchers view the domain.

In the numerical taxonomy, the seven clusters are plotted along two dimensions. Figure 1 helps depict one feature of family business that is clearly distinctive: Family businesses are concerned about both business outcomes and family outcomes. On the left side of Figure 1, the clusters most clearly associated with the business outcome anchor include business performance, strategy, and social and economic impact. The clusters most clearly associated with the family outcome anchor—family dynamics, family business roles, and succession—appear on the right side. In Study 1, we observed that some researchers simultaneously investigated two or more dependent variables. As it turns out, the majority of dependent variable categories investigated are in different clusters: performance and family dynamics. This finding is consistent with our earlier conclusion that many family business researchers argue that outcomes from both the business and family sides of family business are needed to account for the distinctiveness of this domain and for a more complete understanding of family enterprises (e.g., Basco & Rodríguez, 2009). Thus, family business researchers who measure only financial performance are likely to overlook important noneconomic outcomes critical to many family firms (e.g., family values or satisfaction), and researchers who focus only on family-related outcomes may overlook outcomes that are essential for business viability (Basco & Rodríguez, 2009; Dyer & Dyer, 2009; Moores, 2009).

The governance cluster spans both family and business outcomes, suggesting that governance plays a role in coordinating or integrating the two types of outcomes. Its position within the numerical taxonomy suggests that governance lies at the core of family business. There are more dependent variables in the governance cluster than in any other cluster, another indicator of its relative importance; after governance, researchers identified fairly equal numbers of dependent variables to measure business outcomes and family outcomes. At the heart of the governance cluster are four categories—family ownership, family control, governance structure, and decision making. These may be of interest to researchers as both dependent and independent variables because of the role played by governance in integrating family concerns with business concerns. For example, the nature of family ownership (number of owners, equally distributed versus majority ownership, etc.) may influence family control, governance structure, and decision making. Conversely, different combinations of family ownership, family control, governance structure, and decision making may have differing effects on either family or business outcomes. Overall, our findings suggest that the role of governance in balancing and integrating long-term and short-term issues, family and business issues, and other issues associated with individual clusters is a promising area for future research.

We labeled the anchors of the second dimension in Figure 1 "short-term" and "long-term." Although some of the categories arrayed along the *Y*-axis do not have a temporal dimension, we believe that short-term and long-term considerations dominate and signal the complexity of the family business field. For example, the extreme short-term outcome categories include performance-financial (performance cluster) and economic contribution (social and economic impact cluster), suggesting a concern with basic issues of viability. By contrast, the extreme long-term outcome categories include succession processes, succession/transition events, and succession plans (succession cluster), which are topics that require a long-range perspective on continuity of the family business. Still, we acknowledge that these labels are only marginally better than others we might have used (e.g., proximal–distal, a spatial dimension). In the end, we selected a less-than-perfect label over no label at all. In fact, we believe the lack of clear indicators is indicative of the complexity of issues facing family firms (Zahra & Sharma, 2004) and a testimony to the heterogeneity among different types of family businesses (Miller & Le Breton-Miller, 2006).

Our belief is that over the life cycle of a multigenerational business, family business owners and managers

will, in some manner, address most of the outcomes depicted in the seven clusters. Future researchers might investigate the implications of highlighting or ignoring some outcomes in favor of others during the process of family business development. For example, over the life cycle of a family business, what are the consequences of prioritizing one outcome over another in terms of developing the firm? One might posit that if a family firm does not thoughtfully consider developing positive outcomes in all clusters, particularly in the long-term categories and clusters, the family firm is less likely to continue into the next generation. Our observation is that very little multiple-dependent-variable research clearly focuses on the harmony or conflict of short-term versus long-term outcomes (e.g., short-term financial success vs. long-term survival) or on the same dependent variable within the two time frames (e.g., short-term and long-term business mission/goals). This gap suggests abundant opportunities to expand research in the family business domain.

How does the numerical taxonomy compare with other conceptual frameworks found in family business research? This work extends that of Handler (1989), who identified three dimensions of family business—ownership-management, family involvement, and next generation in line for generational transfer. It offers a less complete but more parsimonious framework than Wortman's (1994) typology, given that it focuses specifically on dependent variables. Perhaps most interestingly, the numerical taxonomy lends support to the three-circle model (Gersick et al., 1997; Taguiri & Davis, 1992). Table 2 indicates that the highest percentages of dependent variables used in family business research were in the governance, performance, and family dynamics clusters that correspond roughly to ownership, business, and family in the three-circle model. Beyond those similarities, the two formulations are very different. The numerical taxonomy shows governance as being a prominent aligning and coordinating mechanism among six other clusters, including succession. Furthermore, the numerical taxonomy breaks down the business and family systems into more specific components than the three-circle model. The major difference, of course, is that our numerical taxonomy is focused on dependent/outcome variables whereas the three-circle model focuses on overlapping social systems—two different but important issues in family business.

Research Question 3: What dependent variables are "missing" from family business research or deserve more attention?

We asked our two panels of experts about dependent/outcome variables that seem to be "missing" from our categories. Consistent with our earlier discussion, experts' answers are related to both family and business issues. From studying the missing variables listed in Appendix B, our first conclusion is that researchers are already addressing a wide range of important dependent variables. However, there are more dependent variables/outcomes that should be addressed in future research. For instance, the missing dependent variables identified reveal a strong tie of family to the business, such as "family vision," "family goals," "emotional benefit," and "family resources available to the business." For business families, an emotional commitment to the business may help define family identity. The emotional commitment may be strengthened by the "socioemotional wealth" realized when "job creation" helps business families fulfill their sense of "responsibility" to "sustain" their communities. Thus, to better understand business families, we need to study their emotional commitments and identities. Indeed, these are arguably key components of the nonfinancial outcomes that separate the family business field from other business domains.

Experts also emphasized the importance of understanding how business families maintain "affinal ties" and define roles with in-laws and with family members across generations. Research is needed to address how business families find ways to maintain "family unity" and accomplish business goals, and how they determine how to handle "next generation issues," "exit issues," and transfer "generational control" so as to achieve "family business longevity."

Similarly, experts suggest that we need to investigate how business families achieve their objectives through business performance. Future researchers could investigate how successful business families come to understand their "industry situation" and "anticipated growth (sales and revenue)" and then promote "employee growth" through "incentive systems" to promote "innovation" and achieve "new product success."

Thus, the experts reinforce once again that we should know more about business-owning families, their motivations, and ways they govern their enterprises to

develop business success so as to accomplish family vision and goals. Even more than research in nonfamily businesses, family business researchers need to understand the owners, that is, the owning families: how they manage themselves to accomplish family goals and how they shape their businesses.

We also asked family business experts what dependent variables deserve more attention in future family business research. In general, consistent with Dyer's (2003) observation, experts believe that more attention should be given to variables associated with the family. More focus on the family also reinforces Moores's (2009) argument regarding the importance of the *business family* as a key to understanding the domain. In general, the experts hope to see more attention focused on the family and its influence, especially on "noneconomic goals," "nonfinancial performance," and "family outcomes." One expert summarized this sentiment well: "In my opinion, all outcome variables in the 'family' dimension deserve more attention."

Other noneconomic outcomes that experts highlighted as deserving more attention included sustainability, survival, and longevity. A long-term orientation in business families (Lumpkin, Brigham, & Moss, 2010) combined with a governance system that effectively manages all seven clusters in the model may help the business endure for generations. Family owners who focus only on the short-term outcomes, such as performance and family dynamics, may overlook long-term outcomes, such as strategy and succession. Relevant focus on both short- and long-term outcomes may help the business survive as a family business.

Finally, as other parts of this research has revealed, the experts recognized that business and family outcomes in combination are important. One expert put it this way: "both financial and nonfinancial variables listed above deserve attention. Family businesses cannot survive without financial success. At the same time, financial success is not the only goal of most family businesses."

Limitations

In terms of the literature used in this study, most empirical articles were from *FBR*, so the findings are unavoidably biased toward the type of management-related literature published in *FBR* (cf. James, Jennings, & Breitkreuz, 2012; Litz, Pearson, & Litchfield, 2012).

One way to address this in future research would be to collect more articles from other disciplines, such as marketing, finance, and international business, in order to avoid missing critical variables. However, the academic experts, advisors, and family business owners who participated in this research were from various countries and disciplines, which helped lessen this bias. Additionally, although we had a larger response (a total of 53 experts—Samples 1 and 2—for the two judgment tasks) than found in prior studies (cf., 39 executives in Priem et al., 2002), we are hesitant to claim the representativeness of our respondents or generalizability to the entire family business field. Hence, replications of our studies and larger sample sizes from different disciplines may help provide more insights and confirm the external validity.

The process of creating the numerical taxonomy and labeling its components includes an element of inherent subjectivity (Hanks et al., 1994). In general, we attempted to overcome those limitations by following research protocol and engaging researchers and practitioners in a review and validation of the numerical taxonomy. After obtaining extensive feedback from researchers, practitioners, and reviewers, we feel more satisfied with the labels reported in this study than those used in earlier work (Yu, Lumpkin, Brigham, & Sorenson, 2009).

Summary and Conclusions

To our knowledge, this is the first numerical taxonomy to describe the family business domain in terms of dependent variables/outcomes. Based on this research, we suggest that future researchers emphasize family outcomes and influence in definitions of the domain. There is considerable agreement among the experts we surveyed that more attention be given to how family activities and attitudes influence business outcomes as well as how business contributes to family outcomes (Hoy & Sharma, 2010). There is also evidence that studying the influence of family ownership on a variety of outcomes—both business and family—is common in family business empirical research. Additionally, this research suggests a strong need to develop more comprehensive systems to evaluate the success of a family firm.

This research reinforces the role that governance plays in coordinating family and business outcomes, and in managing both short-term and long-term issues that affect outcomes. We believe this finding has

potentially rich theoretical and research implications. Indeed, from a theoretical perspective, the location of governance in the center of the Landscape of Family Business Outcomes suggests governance may have the most potential for unveiling how to obtain desired outcomes in the other clusters. Thus, researchers might fruitfully examine the relationships between the nature and structure of governance and outcomes in the other clusters.

Comprehensively measuring the outcomes and dependent variables related to both business and family subsystems is important for both researchers and professional managers (Venkatraman & Ramanujam, 1986). Conceptually, Sorenson (2000, p. 183) argued that applying both "family and business to an organization implies that the purpose of the organization is to provide positive outcomes for both the family and the business." Carlock and Ward (2001) proposed a similarly balanced view to demonstrate the uniqueness of the family business field. Although a few studies have addressed this issue (e.g., Astrachan & Jaskiewicz, 2008; Basco & Rodríguez, 2009; Craig & Moores, 2005; Distelberg & Blow, 2011; Dyer & Dyer, 2009; Sorenson 1999, 2000), this research suggests that still more development and research is needed. For example, future research should aim to develop a more holistic understanding about when and why the outcomes from family and business systems will conflict or be harmonious (Basco & Rodríguez, 2009; Dyer & Dyer, 2009). Additionally, the centrality of governance reflects its important, core role in coordinating the overall family enterprise. Traditionally, ownership is viewed as one of the subsystems in the three-circle model (Gersick et al., 1997; Moores, 2009). However, the numerical taxonomy in this research suggests that governance is the primary coordinating mechanism that aligns the overall effort within a family enterprise to create potential competitive advantages (Carney, 2005).

The major contribution of this research is to provide a dependent variable/outcome-driven depiction of the field of family business research. Through research inquiries and a numerical taxonomy, we reviewed 12 years of empirical literature and discovered underlying themes and structures among dependent variables. The numerical taxonomy methodology provides a useful tool for summarizing and revealing relationships among research variables. Also, the numerical taxonomy provides a pedagogic framework to add more insightful details to other typologies (Handler, 1989; Wortman, 1994) and to the three-circle model (Gersick et al., 1997; Sharma, Hoy, Astrachan, & Koiranen, 2007). Hence, we believe this taxonomy indicates that "what seems to be a disorganized (unstructured) phenomenon is in reality an organized (structured) phenomenon" (Davis, 1971, p. 313). Most important, since an academic field is socially constructed by scholars with similar mind-sets (Nag et al., 2007; Shapin, 1995; Stewart, 2008), our findings also provide a platform on which family business scholars, consultants, and interested stakeholders may communicate with one another in helping the field to evolve.

Appendix A

Clusters, Dependent Variable Categories, Uniqueness of Categories, and Exemplar Dependent Variables

Clusters and dependent variable categories—Final validated label	Original label	Uniqueness of categories, frequency (%)	Exemplar dependent variables[a]
Performance	Performance		
C32 Performance-overall success	Performance-overall success	3/22 (13.6)	Perceived success; Familiness qualities; Business outcomes
C33 Performance-financial	Performance-financial/growth	4/22 (18.2)	Firm performance; Profitability; Gross business revenue
Strategy	Strategy		
C10 Strategy content	Strategy content	4/22 (18.2)	Strategic persistence; Strategic responses to emerging economies; Product diversification
C12 Investment policies	Investment policies	4/22 (18.2)	Investment policies; Strategic investment decisions; Allocation of financial resources

(continued)

Appendix A. (continued)

Clusters and dependent variable categories—Final validated label	Original label	Uniqueness of categories, frequency (%)	Exemplar dependent variables[a]
C13 Financial structure	Financial structure	5/22 (22.7)	Debt; Leverage; Family funding versus outsider funding
C20 Internationalization	Internationalization	2/22 (9.1)	Internationalization process; Internationalization; International commitment
C31 Survival and growth	Performance survival	9/22 (40.9)	Length of organization survival; Establishment and growth of an entrepreneurial family business; Organizational failure
Social and economic impact	Environment		
C8 Entrepreneurship	Entrepreneurial behaviors	3/22 (13.6)	Entrepreneurial orientation; Value creation across generations; Entrepreneurial risk taking
C24 Social capital and knowledge transfer	Learning	1/22 (4.5)	Mentoring in family businesses; Socialization processes and patterns; Transfer and management of social capital
C25 Economic contribution	Economic impact	2/22 (9.1)	Prevalence of family firms; U.S. economy; Dutch economy
C34 Regulatory and business environment	Regulatory and business environment	3/22 (13.6)	Perceptions of preventure entrepreneurs toward environments; The most important issues facing private family businesses
Governance	Governance		
C9 Human resources	Human resources management	3/22 (13.6)	Strategic human resource; Human capital, Opportunism
C11 Business mission/goals	Business mission/goals	7/22 (31.8)	Business practices/goals; Company objectives
C14 Role of network	Role of network	5/22 (22.7)	Network composition; Interfirm cooperation capability in the context of networking family firms; Congruity between business and family
C15 Decision making	Decision making	6/22 (27.3)	Start-up decisions; The future leader's perception of the business; Intention to join the family business
C16 Governance structure	Governance	12/22 (54.5)	Corporate governance structure; Informal cooperation; Board composition
C17 Family control	Family control	11/22 (50)	Family control; Control sales; Types of family relationships in top management team
C22 Family ownership	Family ownership	14/22 (63.6)	Ownership; Interest rate premium; Business collateral and personal collateral; Piercing the corporate veil
Succession	Succession		
C2 Professionalization of management	Professionalization of management	5/22 (22.7)	Professionalization of management; Cultural competence and formal competence; Planning

(continued)

Appendix A. (continued)

Clusters and dependent variable categories—Final validated label	Original label	Uniqueness of categories, frequency (%)	Exemplar dependent variables[a]
C3 Succession processes	Succession process	17/22 (77.3)	Succession transition process; The extensiveness of the succession planning process
C4 Succession plans	Succession plan	14/22 (63.6)	Succession plan; Generational differences among family businesses
C5 Succession/transition events	Succession/transition event	14/22 (63.6)	Management transfer; Partial retirement; The selection of internal or external successor
C23 Compensation	Compensation	4/22 (18.2)	CEO compensation; Employee compensation
Family business roles	Family roles		
C6 Role of spouse/copreneur	Role of spouse/copreneur	15/22 (68.2)	Successful copreneurial relationships after divorce; The continuum of coprenuerial couples' business relationships; Copreneur versus noncopreneur
C7 Role of female family members	Role of female family members	14/22 (63.6)	The visibility of heiresses; Challenges in the succession process for females; Women's pathways to participation and leadership
C26 Attitude toward family business–nonfamily members	Attitude toward family business–nonfamily members	14/22 (63.6)	Successful nonfamily CEO
C27 Attitude toward family business–family members	Attitude toward family business–family members	19/22 (86.4)	Attitude to the family and the business; Reasons for children not joining the business
C28 Attitude toward family business–CEO	Attitude toward family business–CEO	16/22 (72.7)	Owner-manager's attitude to family and business issues
C29 Family involvement in business	Family involvement in management	22/22 (100)	Board composition; Percentage of family members in the top management team
Family dynamics	Family outcomes		
C1 Family values	Family values and concerns	20/22 (90.9)	Family values; Corporate social responsibility; Stewardship
C18 Satisfaction	Satisfaction	1/22 (4.5)	Family harmony; Attitude of the second generation; Satisfaction with the succession process
C19 Commitment	Commitment	5/22 (22.7)	Successor commitment; Decision commitment; Shareholder organizational commitment
C21 Conflict	Conflict	10/22 (45.5)	Conflict; Cognitive conflict; Relationship conflict
C30 Family business characteristics	Family business characteristics and definition	20/22 (90.9)	F-PEC; Family business definition; Family Climate Scale

a. Because of the page limit, we included only a few dependent variables for each dependent variable category represented by "C." A table showing specific dependent variables assigned to each dependent variable category is available by contacting the lead author.

Appendix B

Dependent Variable Categories and Related Missing Variables/Categories

Dependent variable categories[a]	Missing variables/categories
C32 Performance–overall success	Noneconomic goals; "Soft performance"—socioemotional wealth; see Astrachan and Jaskiewicz (2008) in *FBR*, also Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, and Moyano-Fuentes (2007) in *ASQ*; Emotional asset; Socioemotional wealth; Productivity; Employee/family development; Family/personal success
C13 Financial structure	Family resources available to the business
C31 Survival and growth	Anticipated growth (sales/revenue)
C8 Entrepreneurship	The explicit usage of innovation/innovativeness seems to have been missing; New product success; Additional areas may include family versus nonfamily management and the intent of the founder: that is, was the firm started as an entrepreneurial venture and evolved into a family firm or did it start as a family venture?
C25 Economic contribution	Job creation
C34 Regulatory and business environment	Industry situation
C9 Human resources	Distributive and procedural justice for family and nonfamily employees
C11 Business mission/goals	Family vision; Family and business goals; Culture of family
C16 Governance structure	Altruism; Incentive system (different from compensation) for family and nonfamily employees; Family structures and systems; Trust
C17 Family control	What about generational control? Is it the founding generation or subsequent generations?
C23 Compensation	Seems quite complete. I trust "compensation" would include "exit strategies" for family members; Effect of business on family life style
C6 Role of spouse/copreneur	Affinal ties—that is, role of in-laws and relatives by marriage, comparative kinship systems, family unity, and decreased or increased family ties in adulthood (in extended families); Legal issues
C26 Attitude toward family business–nonfamily members	Nonfamily advisors
C29 Family involvement in business	Next generation issues—what do they want to be attracted to stay/join family firm—the world/opportunity from their eyes
C1 Family values	Ethical behavior; Tradition; Community responsibility-sustainability
C18 Satisfaction	In my opinion, the EMOTIONAL BENEFIT of owning and managing a business in underrepresented. It may fall within the "Satisfaction" or "Commitment" variables, but I believe it should have an autonomous role. Please refer to Zellweger and Astrachan (2008). I would also consider "Exit" (e.g., from the founder's business, or from one of the traditional lines of products) as an outcome variable. You may here want to consider DeTienne (2010) for the conceptual case of Exit as an outcome variable and Salvato, Chirico, Sharma (2010) for an empirical case; Family satisfaction with and commitment to the business
C21 Conflict	Communication; Quality of relationships; Management of family
C30 Family business characteristics	Family patterns during times of change and disruption

a. C = Category. We make the order of categories consistent with Appendix A. Because one variable may fit several categories and be repeatedly mentioned by different subjects, we use only one exemplar category to include nonrepeat variables. To obtain the full list, please contact the lead author. Also, a full list will be available in a forthcoming book edited by the authors for this article.

Appendix C

Dependent Variable Categories and Related Variables Deserving More Attention

Dependent variable categories[a]	Variables deserving more attention
C32 Performance-overall success	Noneconomic goals—influence relative behavior and performance of family firms; Please see above → nonfinancial performance, as a DV (dependent variable) that explains FF (family firm) behavior, such as, long-term orientation; Performance: what is it? How it is perceived/understood?; Noneconomic outcome variables; Both financial and nonfinancial variables listed above deserve attention. Family businesses cannot survive without financial success. At the same time, financial success is not the only goal of most family businesses; Investigate/include more than financial or objective indicators of business success; Socioemotional wealth; Family harmony (on the family side)/business profitability (on the business side); Emotional profitability; Family harmony (on the family side)/business profitability (on the business side)
C33 Performance-financial	Performance of family firm (financial or otherwise). To better understand how family ownership affects performance; Sales growth—given that many of these firms are privately owned—tax implications associated with being private
C10 Strategy content	Strategy/intergenerational differences; Strategic decision making—is it any different in family firms? Size of family firms is a very important variable— even larger size family firms retain the "family" flavor
C20 Internationalization	Internationalization
C31 Survival and growth	Performance-survival because it's more about the issue of combining economic and noneconomic goals to generate survival as a family business—even though the business can remain, the role of the family may diminish so the familiness may be lost; Sales growth—given that many of these firms are privately owned—tax implications associated with being private
C8 Entrepreneurship	Entrepreneurial behavior—the family's unique ability to start new ventures and innovate over time seems critical to all themes—performance, longevity, and so on; Corporate entrepreneurship/entrepreneurial orientation
C24 Social capital and knowledge transfer	Learning
C34 Regulatory and business environment	Stakeholder relations with family businesses. They are critical in the business environment. Perceptions of these relationships would be of interest
C9 Human resources	Management practices—Human resources (HR)/Organizational behavior (OB)/Planning; HR aspects/processes in family-owned businesses (FOBs)
C14 Role of network	You might want to dig more into the resource-based view (RBV). Networking and associations seem to have an impact on family business success. I didn't really see this here; Role of network
C16 Governance structure	Altruism—we've only scratched the surface on that topic; Formal structure; Functional integrity of family system
C22 Family ownership	Ownership dispersion; Ownership because most research still is done from the business context/business circle instead of ownership or family circle
C6 Role of spouse/copreneur	Situating businesses in the wider kinship systems and not assuming we know what is meant by "family"; I think the cluster of family member roles is interesting for future research. A typology of roles played, more on how to clarify set roles, the relationships between roles in family firms, and so on

(continued)

Appendix C. (continued)

Dependent variable categories[a]	Variables deserving more attention
C26 Attitude toward family business–nonfamily members	Comparisons of consumer attitudes toward products from FOB versus non-FOB; Stakeholder relations with family businesses. They are critical in the business environment. Perceptions of these relationships would be of interest
C27 Attitude toward family business–family members	Stakeholder relations with family businesses. They are critical in the business environment. Perceptions of these relationships would be of interest. In my opinion, all outcome variables in which the "family" dimension is explicit deserve more attention (e.g., Satisfaction, Commitment, Conflicts, Family values and concerns, Attitude of family members toward business). The reason is adopting this type of variables may help unveil the actual role played by the family in affecting outcomes. In too many "family-business studies," the "family" dimension is a simple demographic variable, but the actual family-related mechanisms that should make these firms so special are too often blackboxed
C29 Family involvement in business	Family involvement—something beyond the F-PEC; Successful succession
C1 Family values	Family values; Ethical focus; Ethical behavior
C19 Commitment	Commitment of family members to the family business and family business decisions. This DV will reveal processes that can help explain family management processes (governance) that contribute to both family and firm success; Commitment, conflict, and softer issues as these are more difficult to assess in terms of the impact on the business (and the family)
C21 Conflict	Conflict
C30 Family business characteristics	Definition of family business, successful succession; Family patterns during times of change and disruption
Not categorized	All the above (34 DV categories) because as a result of the lack of sufficient data from private companies, we have only scratched the surface of knowledge; I believe the ones checked above deserve more attention although all listed have some aspects that distinguish family from nonfamily businesses; I think a diversity is preferable to uniformity. There are many research questions worth asking, so probably lots of possible perspectives on outcomes. Also, different stakeholders (family members of different generations, nonfamily employees, economic development officials etc.) are likely to be interested in different types of outcomes

a. C = Category. We made the order of categories consistent with Appendix A. Because one variable may fit several categories and be repeatedly mentioned by different subjects, we use only one exemplar category to include nonrepeat variables. To obtain the full list, please contact the lead author. Also, a full list will be available in a forthcoming book edited by the authors for this article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Notes

1. In scientific research, the dependent variable refers to the event studied or the observed phenomenon that changes (Emory & Cooper, 1991). Outcomes refers to more general measures of the goals and

aspirations that family firms work toward (Chua et al., 1999). We often use the terms interchangeably in this study or in combinations such as dependent variable/outcome or dependent/outcome variables.

2. An earlier version of this article (Yu, Lumpkin, Brigham, & Sorenson, 2009) used labels for some categories and clusters that differ from those listed in this section. The labels used here were later refined and validated in Study 3.

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