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Inexperienced decision-makers' use of positive heuristics for marketing decisions

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ABSTRACT:

Research has reliably demonstrated that decision-makers, especially expert ones, use heuristics to make decisions under uncertainty. However, whether decision-makers with little or no experience also do, and if so, how, is unknown. Our research addresses this issue in the marketing context by studying how a group of young and generally inexperienced entrepreneurs decide when asked to set a price and choose a distribution channel in a scenario involving a hypothetical firm.

The authors used think-aloud protocols to elicit data and then used inductive procedures to code the data for analysis.

The inexperienced entrepreneurs in the sample used three types of heuristics in their decision-making, forming a structured process that narrows in scope. First, metacognitive heuristics, which specify a decision-making approach, were used, followed by heuristics representing the criteria they considered, and finally, heuristics detailing the execution of a selected option. We also found that heuristics relating to a market orientation, especially customer-centric criteria, were the most common, but these were balanced with ones representing an internal orientation or growth.

The generally inexperienced decision-makers we studied used heuristics in a structured way that helped them to select and balance several potentially conflicting decision-making criteria. As with most research using qualitative research designs, the generalizability of these findings is unclear. Further research on the mechanisms by which relatively inexperienced decision-makers learn the heuristics they use is recommended.

CUST_PRACTICAL_IMPLICATIONS__(LIMIT_100_WORDS) :No data available.

CUST_SOCIAL_IMPLICATIONS_(LIMIT_100_WORDS) :No data available.

Our research's novelty lies in its focus on heuristic use by non-expert decision-makers under conditions of uncertainty and our findings about their scope and the order they are used. As we collected data from think-aloud protocols with relatively young entrepreneurs with limited experience, they also offer a description of the heuristics used by nascent entrepreneurs when making marketing decisions about pricing and channels. Our most surprising conclusion is that even without relevant domain-specific knowledge, decision-makers can use heuristics in an ecologically rational way (i.e., structured to match the environment).

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Abstract

- Purpose

Research has reliably demonstrated that decision-makers, especially expert ones, use heuristics to make decisions under uncertainty. However, whether decision-makers with little or no experience also do, and if so, how, is unknown. Our research addresses this issue in the marketing context by studying how a group of young and generally inexperienced entrepreneurs decide when asked to set a price and choose a distribution channel in a scenario involving a hypothetical firm.

- Design/methodology/approach

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- Findings

The inexperienced entrepreneurs in the sample used three types of heuristics in their decision-making, forming a structured process that narrows in scope. First, metacognitive heuristics, which specify a decision-making approach, were used, followed by heuristics representing the criteria they considered, and finally, heuristics detailing the execution of a selected option. We also found that heuristics relating to a market orientation, especially customer-centric criteria, were the most common, but these were balanced with ones representing an internal orientation or growth.

- Research limitations/implications

The generally inexperienced decision-makers we studied used heuristics in a structured way that helped them to select and balance several potentially conflicting decision-making criteria. As with most research using qualitative research designs, the generalizability of these findings is unclear. Further

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Keywords

Decision-making, Heuristics, Inexperienced decision-makers, Entrepreneurs, Marketing.

Introduction

Decisions about elements of business strategy, including those related to marketing, are commonly characterized as being made based on information that is interpreted either analytically (e.g., Akçay et al., 2010; Katsikea et al., 2019) or through experience (e.g., Challagalla et al., 2014; Paşa & Shugan, 1996). But these approaches may not be feasible when little information is available or when decision-makers have little or no relevant (i.e., domain-specific) experience, such as during the early stages of creating a new venture. Relatively little is known about how decisions are made under these conditions. However, some researchers have postulated that decision-makers likely rely on heuristics as a frugal substitute for analysis and align their decisions with their subjective expectations about the business (e.g., Gilbert-Saad et al., 2018). To gain empirical insight into whether and how heuristics are used when both experience and information are limited, we studied how young, relatively inexperienced founders,

whom we call entrepreneurs, made decisions about price setting and channel choice in a hypothetical scenario.

We set our research in the context of decisions about marketing strategy, selecting price and distribution channel as two representative elements about which all firms must decide, which are essential to firm success (Gruber, 2004; Akçay et al. 2010). Pricing decisions are also inherently intertwined with channel selection, and both influence overall business performance and survival (Brettel et al., 2011; Cunningham & Hornby, 1993). Further, decisions about marketing strategy are often made when the product, market, and other details are unknowable *ex-ante*, precluding information-intensive decision-making approaches. In this situation, expert entrepreneurs have been found to rely on heuristics more than managers (Read et al., 2009).

We chose to focus on entrepreneurs starting their first venture, as they are the archetype of an inexperienced decision-maker in an uncertain environment. Entrepreneurs operate under conditions of absolute uncertainty where options and outcomes remain open (Packard et al., 2017), making it nearly impossible for them to make decisions by relying on historical data or experience (Artinger et al., 2015; Busenitz & Barney, 1997). While serial or experienced entrepreneurs may use heuristics developed by recognizing patterns from decisions taken in other ventures (Harrison et al., 2015) or adapted from previous managerial positions (as described for example by Bingham and Eisenhardt, 2011), entrepreneurs with limited relevant experience cannot. Despite this, there is some evidence that inexperienced entrepreneurs do use heuristics (e.g., Busenitz & Barney, 1997; Harrison et al., 2015), which might be learned through vicarious observation, formal or informal education, social development, or acculturation (Kruglanski & Gigerenzer, 2011).

In entrepreneurial contexts where extensive information processing is impracticable (Guercini, 2012; Guercini et al., 2015), and a decision-maker has only a few cues to rely on, the *fast and frugal* perspective (Gigerenzer & Todd, 1999) suggests heuristics offer a particularly suitable and efficient decision-making approach (Mousavi & Gigerenzer, 2014). Studies have found that when information is limited and the environment uncertain, simple heuristics are more efficient than complex decision-making algorithms (e.g., Artinger et al., 2015). These studies are part of a stream of research on *positive*

heuristics (Hey, 2016) that emphasizes the benefits of heuristics rather than their potential for bias and deviations from optimal solutions (e.g., Busenitz & Barney, 1997; Tversky & Kahneman, 1974). Thus, highlighting heuristics' *ecological rationality* (i.e., the fitness of using heuristics to make decisions in a particular environment) (Todd & Gigerenzer, 2012).

Our research is inspired by Bingham and Eisenhardt's (2011) study that found decision-makers who have relevant experience use ecologically rational heuristics to arrive at their decisions. We extend their inquiry by asking if decision-makers with limited relevant experience can also use heuristics effectively, especially when they have little information, mimicking a real-world condition of high substantive uncertainty (i.e., where uncertainty is caused by a lack of information, Dosi & Egidi, 1991). Simon (1990) famously described boundedly-rational behavior as shaped by a scissor whose two blades are the structure of the environment on the one hand and the cognitive characteristics of the decision-maker on the other. While much research has focused on the structure of the environment, less has taken into account Simon's assertion that "We have also to take into account that thinking capacities are a function of skill and knowledge, stored neural structures in the brain (p.7)."

The potentially ecologically rational use of heuristics by a decision-maker with little or no relevant experience is a largely unaddressed topic, as much of the research on positive heuristics in the literature on both strategic management (e.g., Bingham & Eisenhardt, 2011; Maitland & Sammartino, 2015) and entrepreneurship (e.g., Bingham et al., 2019; Sinyard et al., 2020) have focused on heuristics acquired through experience. However, a few studies of the use of heuristics by entrepreneurs have begun to challenge long-held assumptions about the role of experience in their acquisition and use (e.g., Gilbert-Saad et al., 2018; Zhang et al., 2020).

To explore the question of whether decision-makers with limited relevant experience and no expertise of the particular context also use heuristics, we collected data from 25 entrepreneurs using a think-aloud protocol, a widely used method for reliably externalizing covert cognitive processes (Ericsson & Simon, 1998). We followed the coding process advocated by Gioia et al. (2013) to identify and then inductively classify 239 heuristics into hierarchical groupings of increasing abstraction. We adopted an exploratory approach to remain open to seeing the phenomenon in a new way (Bansal et al., 2018; Graebner et al.,

2012), which uncovered previously unidentified marketing-related heuristics and how they are combined and the sequence of their use.

Our key finding is that there are three types of heuristics (metacognitive, representing criteria, and detailing the execution) serving different functions in the decision-making process. The participants in our study moved from broad to more specific heuristics as they approached a solution, consistent with Bryant's (2007) hypothesis that the use of heuristics may be self-regulated. Our findings suggest that non-expert decision-makers can use adaptive toolboxes of heuristics in unfamiliar domains and provide the first list and categorization of the heuristics that entrepreneurs use to choose marketing channels and set prices.

In the remainder of the paper, we first discuss the literature on marketing decisions and heuristics in an entrepreneurial context, followed by a detailed description of how we collected and analyzed our data. We then discuss our findings before concluding the paper by highlighting our study's key contributions and limitations.

Marketing decisions and heuristics in an entrepreneurial context

Marketing decisions are critical to overall business strategy (Bolton, 2004; Cavusgil & Zou, 1994; Phillips et al., 1983), often determining business performance (e.g., Keh et al., 2007; Morgan 2012), survival or growth (Gruber, 2004; Naidoo, 2010). Indounas (2006) argues that pricing is one of the most challenging decisions because of its impact on other strategic decisions. Many theoretical models purport to either explain or aid the process. These often assume that there is a correct way to price, typically beginning with existing market and cost information (e.g., Candogan et al., 2012; Krishnan et al., 1999). Consequently, pricing decisions are characterized as a step-by-step process that includes clarification of the goal, followed by comparing all applicable pricing options (Drummond, 1996; Estelami & Nejad, 2017; Kienzler, 2017; Rusetski, 2014). Akçay et al. (2010) point out that with increased data availability and computerized modeling, established firms can even use information about market and customer behavior to adjust prices dynamically.

In practice, however, the process is often less structured and relies as much on experience or heuristics as on data. For example, studies show that business owners, especially when facing uncertainty, tend to use a mix of formal and informal information and intuition and exhibit satisficing behaviors when making pricing decisions (Estelami & Nejad, 2017; Greenbank, 1999; Kienzler, 2017; Rusetski, 2014). Greenbank (1999, p. 64) shows that despite the consideration of market prices and research into the cost of materials, the final price is often based on "a bit of experience, a bit of intuition." Similarly, Guercini (2019) found that pricing decisions often involve a mix of formal decision-making models and heuristics, particularly *multiplier* heuristics (a frequently used multiplier heuristics is, for example, determining the price of products by multiplying their cost by a constant number).

Similar to pricing, decisions about distribution channels are also important, particularly at the earliest stages of venture formation. These decisions determine go-to-market strategy and revenue generation, often restricting future market options for nascent enterprises. Furthermore, pricing is inherently intertwined with channel selection so that both influence overall business performance (Brettel et al., 2011). Not surprisingly, this literature is also replete with descriptions of normative processes for channel selection that rely on comprehensive data analysis (e.g., Payne & Frow, 2004; Sharma & Mehrotra, 2007).

Thus, most frameworks for both price and channel selection suggest two main decision-making mechanisms, which are often used in combination. First, these decisions are often underpinned by formal procedures (Citroen, 2011) that include extensive information gathering, processing, and reliance on complex (mathematical) models (Indounas, 2006). However, empirical studies have found that pricing and channel decisions are also informed by heuristics derived from experience (Challagalla et al., 2014; Paşa & Shugan, 1996). These less formal approaches can even become established organizational routines that guide decision-making across generations of owners and managers (Guercini, 2019).

There are relatively few studies of price-setting or channel selection in the context of small and emerging businesses. Still, the indication is that decision-makers in smaller firms tend to rely on non-optimizing approaches when setting marketing strategy (i.e., do not gather data and formally analyze them). For example, McNaughton's (2001) study of channel selection in international markets found that managers

made channel decisions quickly and by intuition, foregoing formal market research, or consultation with outside experts. Similarly, Indounas (2006) found that small and medium-sized enterprises (SMEs) often lack systematic procedures to set their prices. Beyond the resource limitations of being small, new ventures operate under conditions of absolute uncertainty when introducing new products and services into new or emerging markets. The market structure might be unknowable, and information may be limited by substantive and procedural limits to rationality, making analytical approaches infeasible. In such a context, there is a tension between the long-held tenets of marketing practice in established markets and how entrepreneurs pursuing opportunities in new markets or launching new products or services *actually* make marketing decisions (Gilmore, 2011). Indeed, analytic marketing tools are underused by, and arguably are of little use to, entrepreneurs who face unique market contexts (e.g., Brettel et al., 2011; Hills & Laforge, 1992).

Outside of the context of decisions about marketing strategy elements, studies of decision-making by entrepreneurs suggest that they often approach decisions in non-rational or intuitive ways (Busenitz & Barney, 1997; Mitchell et al., 2007). In this literature, there is general agreement that entrepreneurs frequently use heuristics, but there is substantial disagreement as to whether or not this leads to biased decisions (e.g., Burmeister & Schade, 2007; Busenitz & Barney, 1997) or unique value creation (e.g., Dew et al., 2009). Busenitz and Barney (1997) is a seminal example of the first view. Their research equated the use of heuristics with biases. Comparing differences in decision-making between entrepreneurs and managers, they showed that entrepreneurs rely on heuristics more than managers do. This contrasts with Sarasvathy's (2001) seminal research, which, inspired by Simon's work on satisficing, focused on how entrepreneurs use the means at their disposal to shape the future of their ventures. The research streams inspired by these two studies provide contrasting views of heuristic use as either leading to biases or representing an expert decision-making approach. The effectuation stream of research sees heuristic use leading to positive outcomes. Still, related empirical studies have focused on expert (i.e., experienced) entrepreneurs and their decisions about resource use (e.g., Dew et al., 2009; Read et al., 2009).

Bingham & Eisenhardt (2011, 2014), building on Gigerenzer and colleagues' earlier work, some of which was later collated in an edited book by Gigerenzer and Todd (1999), have extended the notion of heuristics as an approach that can positively inform decisions. These researchers concluded that decision-makers use heuristics in the form of portfolios of *simple rules* that are learned and refined through experience, and their use in uncertain environments often leads to more appropriate outcomes than analytical approaches. While these studies demonstrate the potential importance of heuristics to decision-making in the context of uncertainty, Bingham & Eisenhardt's empirical evidence is drawn from firms as they sequentially entered international markets, and thus the decision-makers they studied were able to draw on prior experience to develop rules. In contrast, understanding of how non-experts use heuristics for strategic decisions is less developed. It is unclear, for example, how decision-makers with little prior experience make the important pricing and channel decisions that can determine the future success of their venture.

At a more abstract level, thinking can be subdivided into Type 1, or intuitive, and Type 2, or deliberate thought. While some theorists conceptualize these types of thinking as discrete processes (Evans, 2008), others view them as artificial poles of a continuum of processing types (Kruglanski & Gigerenzer, 2011; Keren & Schul, 2009). Regardless of whether Type 1 and Type 2 represent discrete cognitive processes or form a continuum, they correspond to broad clusters of attributes. Type 1 is defined by its autonomy, and Type 2 by its ability to override Type 1 and sustain decoupled representations (Pennycook et al., 2018; Stanovich & Toplak, 2012).

Type 1 processes, such as heuristics, are expected to be fast, nonconscious, and experience-based (Evans & Stanovich, 2013), leading Kahneman and Klein (2009) to insist on the importance of expertise for "rational" use of such processes. Conversely, Type 2 processes, such as information-intensive analyses, are thought to be slower, controlled, and informed by explicit knowledge. However, this theory does not account for findings that show complex decisions made unconsciously by inexperienced decision-makers with little to no information are often ecologically rational and lead to logically coherent mental structures (Dijksterhuis & Nordgren, 2006; Fiedler & von Sydow, 2015). Our research investigates

whether this conclusion is also correct for strategic decisions, and if so, what the mental structures used by inexperienced decision-makers when making marketing decisions may be.

Methods

To gain empirical insight into this issue, we designed a study to detect the use of heuristics by relatively inexperienced venture founders as they made decisions about pricing and channels under conditions that mimic high levels of substantive uncertainty. This section describes our method, starting with the rationale for the research design and then explaining how the data were collected and analyzed.

Decision-making can be based on logic, probability, or heuristics (Gigerenzer, 2008). Under conditions of significantly constrained time, information, and cognitive processing power, and when there is no pre-definable optimal solution, logic and probability are less useful. In such circumstances, which characterize many of the decisions that founders must make, heuristics may be the most plausible decision-making approach. We thus designed our data collection to mimic such conditions.

By limiting access to information, we created artificial conditions to elicit the use of heuristics. We did not, however, force participants to make decisions. On the contrary, participants were invited to stop when they reached a decision or expressed their inability to conclude. In three instances for the first decision and four cases for the second, participants did not make final decisions. Instead, they concluded their decision-making process by verbalizing their inability to decide. The think-aloud protocol also allowed us to capture the preference for using data to make decisions (e.g., "normally I would look for ...") rather than solely relying on simple rules.

The participants in our study were given a short hypothetical case to read (see Appendix I) set in the meat-packing industry, a context in which none had previous experience, and which was unfamiliar, as most were starting a technology-related venture. In addition to allowing us to test decision-making under substantive uncertainty (i.e., the participants were not able to draw on available domain-relevant information), the case limited the use of imitation as a general heuristic (i.e., merely suggesting pricing or channel outcomes based on knowledge of what others in the industry do). By confronting our participants with decisions in this unfamiliar industry, we created conditions in which the participants

had to decide quickly and under high levels of substantive uncertainty. Also, as our interest was in heuristics not acquired from experience, we selected participants with generally limited managerial and entrepreneurial experience. Participants' characteristics are presented in Table 1.

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Insert Table 1

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We collected data using a think-aloud protocol while participants solved the case in real-time. Think-aloud protocols provide a realistic expression of decision-makers' cognitive processes (Ericsson & Simon, 1998). Compared with interviews, think-aloud protocols avoid conscious or subconscious deception (Ericsson, 1993) and social-desirability bias (McVea, 2009). We used concurrent protocols in which the participants verbalized during decision-making. This approach is more reliable than retrospective protocols as the data is captured as thought processes occur (Ericsson, 1993, 2006), thus avoiding recollection bias (Guercini, 2015). Think-aloud protocols also promote comparison between participants, as they all verbalize their thinking while trying to solve the same task. The approach has been used in studies of the cognitive processes of inexperienced decision-makers, including analogous situations like investing in new ventures (Harrison et al., 2015), but also in fields as diverse as education (Swanson et al., 1990), health sciences (Embrey et al., 1996; Hoffman et al., 2009), and computer sciences (Collier, 1983; Hong & Liu, 2003).

We conducted think-aloud protocols with 25 recent founders (i.e., individuals in the process of launching or scaling a venture created within the previous three years) aged between 18 and 29 years old. Thus, beyond their common relative inexperience, our participants were at a comparable stage in the development of their ventures at the time of the interview. Although there is no strict rule regarding sample size, it is common in think-aloud studies to use a relatively small sample to ensure a wide range of information that can increase the transferability of results (Güss, 2018), while not being overwhelming to analyze. The participants were instructed first to read the protocol's instructions and then immediately answer the questions. The short case (372 words) describes a meat-packing company

that needs to make strategic choices about its pricing and distribution channel based on limited available information. Two questions were asked to simulate a path-dependent process (see Greener, 2002 for an example), as real-world decisions usually follow, and are influenced by, preceding decisions. We thus expected that the first decision on channel selection would influence the second decision about pricing, hence simulating actual decision-making more closely.

We adopted the conversational form of the think-aloud method (Williamson et al., 2000), where the researcher acts as a listener, providing conventional signals of engagement (e.g., nodding) but otherwise does not provide any additional guidance or interventions. We recorded and transcribed verbatim the thought-sequences in preparation for analysis.

As there was little guidance in the literature about the heuristics we could expect, our analysis began with coding to extract all rules informing the decisions taken by the participants. While this step can be described as a form of open coding, it was still implicitly informed by existing conceptualizations. We adhere to Ericsson and Simon's (1998) view that thinking can be represented by a sequence of thoughts that are verbalized during the think-aloud task. Our goal was to organize these sequences within a set of cognitive operators (a process labeled *script analysis* by Fonteyn et al., 1993). As most verbalizations were descriptive, we extracted them in the form of actionable heuristics, in a process similar to the one used by Manimala (1992). We identified 239 heuristics, examples of which are presented in Table 2.

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Insert Table 2

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This first step provided a long list of the heuristics used by the participants when making their decisions. However, to be able to analyze how the heuristics were used, we needed to reduce their number by classifying them systematically into abstract categories (Artinger et al., 2015). To do this, we built on the multi-step inductive approach suggested by Gioia et al. (2013). We followed a rigorous process to achieve agreement between the researchers on heuristics' assignment to hierarchical groups of increasing abstraction (see examples in Table 2). By the end of the process, we had organized the heuristics into

49 first-order categories and these categories into 15 more abstract second-order themes. Finally, we distilled the 15 themes down to five dimensions. Among these five, three represented rules for criteria selection (although with different classes of criteria), and we further collapsed these three dimensions into one. The result is thus three higher-level dimensions, composed of broad rules for framing the decision (*metacognitive* heuristics), rules for selecting criteria about the decision (*criteria* heuristics), and rules with a narrow scope that guide implementation of the decision (*implementation* heuristics). This hierarchical classification of heuristics is summarized in Figure 1.

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Insert Figure 1

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Findings

Despite lacking prior experience or knowledge of the context, the participants in our study used, on average, 5.8 heuristics (standard deviation of 3.3 heuristics) when making channel decisions and 3.8 heuristics (standard deviation 2.3 heuristics) when making pricing decisions. The lower average number of heuristics for the pricing decision likely reflects path dependence when making sequential and interlinked decisions (see Schreyögg & Sydow, 2011) rather than suggesting that channel decisions inherently require more heuristics. As participants naturally tried to make their second decision consistent with their first, and there was little additional information, fewer options remained when making the second decision.

Most participants followed a sequence in their use of heuristics. They typically started from metacognitive heuristics, used relevant criteria heuristics to decide, and ended with implementation heuristics. Notably, this pattern spans the entirety of the task (i.e., the decision task composed of a decision on pricing first, channel second), rather than each decision independently. We found more metacognitive heuristics for channel selection than for pricing (25 versus 8), while implementation heuristics for pricing outnumbered those for channel selection (12 versus 4). A likely explanation is that participants started from metacognitive heuristics to specify a decision-making approach for both

decisions, and verbalized implementation heuristics towards the end of the task, after the intended course of action for both channel selection and pricing was set. It thus appears that instead of approaching each decision independently, participants considered both problems holistically. The following sections describe the findings for each of these three types of heuristics.

Metacognitive heuristics

The first type of rules we uncovered are *metacognitive* rules (or more precisely *tacit metacognitive rules for process regulation*; see Schraw & Moshman, 1995) that specify rules about available decision-making approaches (i.e., based on the available data, on experience, or intuition and imagination), and that frame the remainder of the decision-making process. As these rules represent cognitive strategies, we labeled them *metacognitive heuristics*. They were often used to approach the totality of the task and were typically used early in the decision-making process: 15 of our 25 participants started with a metacognitive heuristic. Furthermore, the participants verbalized them more frequently for the first decision on channel selection (25 instances, compared to 8 cases for pricing), which is likely linked to the decisions' order. We found three different metacognitive heuristics: data-driven (used by 10 participants), intuition-driven (12), and experience-driven (11).

The first of these metacognitive heuristics represents decision-making strategies that use the available data. While initially expressing frustration with the lack of data, particularly about the finances of the case firm, most of the participants started from a specific piece of available information to inform their decision, arguably representing a form of *one-reason decision-making* (Gigerenzer et al., 2008) in the sense that they do not proceed with a complete search of cues and do not compensate between the validity of the various cues (Gigerenzer & Goldstein, 1999). In the following quote, the participant focused exclusively on the relationship between the case company and supermarkets and thus neglected other equally valid pieces of information:

> So obviously it's hard without some numbers, so I'd first try and look at the numbers and try and analyse which is going to be the great opportunity. Now, one thing that I note is that his supermarkets don't necessarily need to be a threat if his wholesale operation actually just sells to supermarkets.

> Because having a range of quality meats within as supermarket is a common thing, I mean, there's been butchers within New Zealand, within Wellington that have done similar and had a lot of success. So providing that, if people want to be, you know, convenient consumers they can do both, they can buying the high quality meats from Angus Meat, but also have the convenience of shopping at their local supermarket.
>
> So I don't see why the wholesale operation would necessarily suffer from partnering with large supermarkets. So I guess I would favour the wholesale operation, and look to partner with supermarket chains and actually sell the supermarket chains, because that solves the warehousing issue as well, coz they can provide their own warehousing, or you can just ship directly to supermarkets as well as your own retail stores. So yeah, I'd favour the wholesale operation.

In this example, the participant built the remainder of his decision-making process on this cue and, while he later integrated other pieces of information, the whole rationale for the decision can be seen as built on this single particular consideration.

Seven participants initially applied a data-driven metacognitive heuristic, which is arguably not ecologically rational as the case contained minimal data. However, of these, four subsequently used a more ecologically rational heuristic. Among the three others, one failed to decide on a channel. The other two failed to decide on either a pricing strategy or channel, illustrating this approach's ecological irrationality.

The second metacognitive heuristic represents the use of intuition, instinct, imagination, or preferences, none of which overtly rely on the information contained in the case. Instead, this decision-making process is based on holistic and covert assessments of the situation or imagining alternative scenarios. For example, in the following quote, the participant instantly favors a specific channel, potentially representing a *recognition* heuristic (Goldstein & Gigerenzer, 2002):

> As soon as I sorta see that wholesale operation, my mind immediately jumps to being able to build a consistent, repeatable and scalable sales process.

The third type of metacognitive heuristic characterizes reliance on experience. Despite our sampling to reduce the influence of domain-specific expertise, the participants translated their experience (professional, personal, and, for some participants, entrepreneurial) into the novel situation. Apart from one who suggested using the experience of competitors, all the participants drew parallels with situations they had personally encountered. The following statement illustrates this approach:

> So I guess like having worked in, having started a start-up before and things like that and had to sort of manage the strategic decisions of the company and things, the biggest thing that we always talked about was the biggest competition was ourselves, and our ability to just get up every day and be the best company we can be and make the most effort to solve people's problems, and just make people's lives a bit easier.

We surmise that the use of metacognitive rules allows our mostly inexperienced decision-makers to self-regulate their use of heuristics by framing the subsequent selection of criteria. This is consistent with Bryant's (2007) proposition that entrepreneurs self-regulate their use of cognitive approaches, including heuristics, depending on their goals and the decision's nature. This represents an ecologically rational selection of heuristics as these broad metacognitive heuristics (as a class) are most useful when the "problem" at hand is also still broad or undetermined – i.e., at the beginning of the decision-making process.

Criteria heuristics

The largest number of heuristics (190) relates to the criteria considered by the participants to inform their decisions. We found that criteria reflecting customer-centric approaches were the most common (56 of 190 heuristics), but 20 of 25 participants balanced these with additional market-oriented considerations such as competition (21 heuristics) or strategic consistency (18 heuristics). Among the customer-centric criteria, the most frequent was to consider the value offered from the perspective of the customer, as illustrated by this quote:

> I guess if I went the wholesale operation and thought about convenience, if that's kind of the big motivator of people, you could think about trying to market a meat delivery service, you know there's lots of existing models that do that.

We also found rules to assess market trends and forces and customers' demographic characteristics and focus on customer relationships and retention. Interestingly, one heuristic ("Ignore your customer's willingness to pay") was used to reject a potential criterion.

The second-most used criteria reflect considerations linked to the potential for growth, as illustrated by this quote:

> I wanna be looking at, yeah, like I said, the, the size of the opportunity for each [option]. The projections of how quickly they would grow, what their, their next step is, if they, you know, plan to move into other regions. And then you know, other markets, and then therefore what is deemed to be the more successful branch there.

The other criteria are competition, manageability, financial considerations, alignment with the overall strategy, and existing resources and capabilities. Table 3 shows the frequency of use of these criteria for selecting channels and setting prices.

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Insert Table 3

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As they guide the choice of potential opportunities, these rules are comparable to the *selection* heuristics conceptualized by Bingham and Eisenhardt (2011), representing rules of thumb guiding the choice of opportunities to pursue or ignore. Selection heuristics help decision-makers cope with an abundance of potential options by constraining their range. We also found two heuristics that could be considered *temporal* ("Start with costs, then price in differentiation" and "Determine your overall strategy before choosing the channel"), and one *priority* heuristic ("The pricing does not matter as much as the logistics

processes"). However, because we did not focus specifically on their temporal dimensions or their relative weight, these were classified as criteria heuristics rather than in a separate category.

Implementation heuristics

The third set of rules, used by 9 of the 25 participants, detail the decision's execution and are thus comparable to the *procedural* heuristics described by Bingham and Eisenhardt (2011). As these rules are used to provide details on a chosen course of action, they were generally expressed towards the end of the decision-making process. We found rules specifying conditions of the execution of selected actions, illustrated by the following example:

> So I'd, assuming that the prices are already low enough that market share is increasing, and people are buying it, then I'd keep the price at the same level. But have the option of increasing prices if the competitors do so, or other things come up. But yeah, I'd keep them at the same level.

We also found rules for executing a chosen course of action, for example, by specifying steps or by identifying changes in response to an option. The following statement, detailing the execution of a price increase, is an illustration of these rules:

> And you can do it in a sort of slow way, you know, you can give people some free bits and things like that, to make them feel, you know, initially over a period of time that they're not feeling, they feel really supportive and stuff.

Finally, we also uncovered rules for assessing the appropriateness of the chosen decision, illustrated by the following quote:

> And then again, as an entrepreneur, you have to evaluate every time and understand the response of the customers and be able to adapt quickly. Otherwise, you may lose everything, and fast.

Discussion

We studied how entrepreneurs with limited or no domain-specific experience make decisions under uncertainty by identifying the heuristics they employed and the order in which they were used during the decision-making process. We identified 239 heuristics, which were subsequently hierarchically classified into metacognitive, criteria, and procedural types. Our participants tended to use the broadest category of heuristics, metacognitive heuristics, first followed by criteria heuristics, which are narrower in scope, and then concluded with implementation heuristics. This observation suggests that non-expert decision-makers, operating under conditions of uncertainty, dynamically change their heuristic's scope as they move from the beginning of the process toward a decision. While Bingham and Eisenhardt (2011) found that decision-makers relied on experience to acquire and refine heuristics in a patterned way, we found that, even with limited experience, heuristics are used in a patterned and ecologically rational way throughout the decision-making process. Our findings highlight the importance of considering decisions, not as discrete events, but as dynamic processes where decision-makers require (and generally retrieve) different ecologically rational "tools" from their *adaptive toolboxes* (the repertoire of heuristics an individual acquired) at the various stages of this process. Another implication of our findings is that decision-makers with little to no experience structured their decision-making process mostly unconsciously. Indeed, if we accept that the captured verbalizations represent our participants' sequence of thoughts, they often expressed the application of rules immediately, without an overt rationale for their selection. These findings tend to confirm the hypothesis developed by Dijksterhuis and Nordgren (2006) that unconscious thought can be effectively used as an approach for complex problems, especially when they are closer to imperfect and fuzzy "real-life" problems (Bargh, 2011).

Beyond these broad considerations, these findings potentially inform three areas of management research. The primary contribution is to research on the specific topic of how relatively inexperienced decision-makers approach strategic decisions under uncertainty. But the study is also relevant to research on the relative role of intuition and analysis in the context of venture creation and entrepreneurial

marketing as we provide the first list and categorization of the heuristics that founders with limited experience use to choose marketing channels and set prices.

Our study participants generally used heuristics in a specific order, starting from metacognitive heuristics to frame the decision and ending with implementation heuristics that inform how the decision will be executed. This sequence suggests that heuristics are used in a funnel-like process, starting with the heuristics with the broadest scope and ending with the narrowest scope. Guercini (2019) defined scope as the boundaries of the field in which a heuristic can be appropriately used (i.e., where its application fits with the environment's structure). Much of the existing literature, however, neglects the dynamic nature of the decision-making environment. When participants start with a broad, ill-structured problem, they first solve the sub-problem "how to approach this problem?" They are faced with both substantive and procedural uncertainty at this stage and first use metacognitive heuristics to resolve procedural uncertainty. Metacognitive heuristics have a broad scope, and the ones we uncovered could potentially be applied to business decisions beyond elements of marketing strategy.

Once a cognitive approach is selected (i.e., the participants have resolved procedural uncertainty), the next sub-problem can be formulated as "which criteria are relevant here?" At this point, the uncertainty is substantive, as decision-makers do not have all the information required to inform their choice. Although these criteria heuristics are structurally like metacognitive heuristics in the sense that they often comprise the same building blocks (e.g., recency or random search, elimination, or one-reason decision-making), they apply to a narrower set of problems. Each criteria heuristic is directly relevant to the problem at hand (pricing, channel selection, or sometimes both), so it only represents one specific aspect of a more extensive, complex, multifaceted, and often interdependent problem. Because of their cognitive frugality, criteria heuristics allow decision-makers to balance many relevant criteria with reduced effort. A favorable implication may be that heuristics help avoid an over-reliance on established culture, processes, or routines that may lead to managerial myopia (Laverty, 2004).

Finally, some of the participants did not stop when they reached a decision; instead, they continued by using implementation heuristics to specify conditions of application, test the decision, or more generally elaborate on their choice. The question addressed here is, "how would that work?" As both the

substantive and procedural forms of uncertainty have been managed for the task at hand, many participants also considered potential uncertainties arising from implementing their decision. These implementation heuristics have a very narrow scope, as their role is only to set specific conditions for applying the decisions, for example, when not to pursue the selected course of action.

Busenitz et al. (2003) suggest that the use of heuristics leads entrepreneurs to think in less structured ways but our participants, operating under conditions of uncertainty and with little relevant knowledge or experience, followed a clear structure, beginning with broad problem framing and ending with specific details about executing a course of action. This finding is similar to Mintzberg's (1976) observation, made in the context of established organizations, that unstructured decision processes tend to follow specific path configurations. Our study uncovered an analogously structured process. While our participants could have applied this decision-making structure to each question, they largely ignored the artificial separation between the two problems of channel selection and pricing. They used a single structure to answer both questions.

As a way of understanding these observations, we surmise that heuristics offer a "middle way" that is neither wholly unsystematic (e.g., as described by Indounas, 2006 or McNaughton, 2001) nor overly structured, adding a shade of grey to the picture painted by the extant research. Prior studies concluding that SMEs make decisions about marketing strategy elements in a non-rational way perhaps failed to notice these relatively subtle structured approaches due to the theoretical frames and methods they adopted. Indeed, some of the broader literature suggests that SMEs rely on embedded yet obscured practices and routines in their daily operations (e.g., Hutchinson & Quintas, 2008).

We found a nearly equal split between the use of intuition-driven, experience-driven, and data-driven rules for framing decisions through metacognitive heuristics. About a third of the participants sought data to make market decisions, even when faced with a short case containing minimal information. Thus, our results somewhat contradict the assumption that entrepreneurs approach decisions intuitively and forego analytical methods (e.g., Busenitz & Barney, 1997; Mitchell et al., 2007). While about two-thirds of our participants did start with a heuristic grounded in either intuition or experience, we did not expect

such a high percentage would prefer analyzing data to support their decisions, especially considering the purposeful lack of information in the case.

Most of the criteria heuristics reflected either a market-orientation (i.e., decisions are made with value for the customer uppermost in mind) or an internal-orientation (i.e., decisions are made according to the firm's resources and capabilities). The heuristics used most frequently by our participants were customer oriented. To a lesser degree, the entrepreneurs also used other heuristics representing a market orientation (as defined by Narver & Slater, 1990), for example, criteria focusing on competitors or on consistency with their strategy. While criteria representing elements of a market orientation were the most common, 80% of the participants balanced these with criteria representing an internal orientation, for example, criteria relating to costs for the company, product characteristics, the ability of the company to manage potential options, and the management of resources and capabilities.

While market and internal orientations are sometimes characterized as incompatible, balancing both is critical to a venture's performance (Lings, 1999). Rusetski (2014) suggests that, when faced with limited information, managers balance potentially contradictory requirements by using heuristics to determine their pricing strategies. Our results extend this finding to entrepreneurial contexts. Information scarcity is arguably a more common issue, suggesting that heuristics' flexibility and frugality also allow decision-makers to balance several requirements (Gilbert-Saad et al., 2018). This is important, as the expected performance of an inside-out (prioritizing internal resources) or outside-in (prioritizing a market orientation) marketing approach may be moderated by contextual characteristics that are not easily foreseen by those operating in entrepreneurial contexts (Saeed et al., 2015).

Conclusion

We found that most of the decision-makers in our study followed a structured approach in their use of heuristics, starting with metacognitive heuristics that framed their approach to the decision, then a set of heuristics encapsulating the criteria used to make the decision, and finally implementation heuristics that specified details of how the decision would be executed. This suggests that a simple (and possibly mostly unconscious) structure emerges when using heuristics, hinting at a patterned approach to managing uncertainty (i.e., resolving procedural uncertainty and then substantive uncertainty).

However, our research scope did not extend to understanding how this decision structuring process develops, leaving this critical question for further study. It is a plausible assumption that the learning necessary and sufficient for the use of heuristics is transferred by analogy to the field of business behavior from other experiences and expertise that participants already acquired.

While many heuristics studies focus on the overemphasis placed by decision-makers on only one or a limited set of criteria to the detriment of other potentially relevant ones, the participants in our study considered several criteria, often representing incompatible approaches. We found that the criteria relating to market orientation (mainly focusing on value for customers) were among the most used. Still, most participants balanced a market orientation with internal considerations, and sometimes also general ones linked to growth. These findings suggest that unlike prescriptive approaches requiring market information adapted to specific contexts, heuristics help inexperienced decision-makers balance several potentially conflicting criteria in a structured way, even with minimal information. This is a crucial advantage when making decisions under uncertainty.

Limitations

As with all research, our findings are subject to limitations. First, as is typical for an inductive research approach, there are limits to the generalization of the results. While we strove to limit these by ensuring methodological transparency and by following a structured approach to the data analysis, we do not claim that this approach can lead to generalizable findings (see Elsahn et al., 2020; Pratts et al., 2019). Indeed, as we created hypothetical conditions that mimic high levels of substantive uncertainty under specific time-constraints (linked to the nature of the task), further research is needed to determine whether our conclusions are generalizable to other forms of uncertainty and contexts. While our sample was composed of young founders of recently initiated ventures, and the case focused on choosing marketing strategy elements, we hope the findings are relevant to the broader study of decision-making by novices facing uncertainty and little relevant information.

As we designed our study to make using analytical and information-heavy approaches impractical, we cannot draw comparative conclusions about the performance outcomes of using heuristics. Indeed, because of the hypothetical nature of the task, we could not differentiate between successful heuristics

(i.e., those with the potential to become best practices, see Reijers & Liman Mansar, 2005) and those linked with biases, errors, or unintended consequences. Instead, we assessed the ecologically rational use of heuristics against the stage in the decision-making task. Further studies on this topic might explore when and why heuristics work well. Beyond the issue of performance, our knowledge also remains limited about the mechanisms for acquiring heuristics. While the literature generally assumes they are acquired through repeated domain-specific experience, we found that decision-makers with no or limited experience of strategic decision-making can still use heuristics in a structured way, generally matching the type of heuristic with the stage in the decision-making process.

The think-aloud approach helped to mitigate recollection issues. Still, the specific tasks captured in a short case are only partially representative of those entrepreneurs face in the real world. Because our participants were asked to make decisions about a hypothetical scenario and without the opportunity for the maturation of thought, their decisions and the criteria considered may not reflect those they would use to choose marketing strategy elements for their venture. A similar issue is that actual decisions put resources at stake, which is not the case for hypothetical scenarios, and might lead to different decision-making approaches (Kunreuther et al., 2002). Our think-aloud task captured intended strategies, not emergent ones (for the distinction, see Mintzberg & Waters, 1985), and thus neglected the effect of potential alternative approaches on the link between strategy formulation and implementation (Bourgeois & Brodwin, 1984). While we controlled for potential biases arising from the participants' experience, educational background, age, and industry, we did not control for certain dispositions (e.g., risk-taking propensity or preference for innovation) that have been linked to varying goals and thus decision-making strategies (see, e.g., Stewart Jr et al., 2003).

In this study, we assumed that the participants had limited or no experience directly related to the hypothetical case. However, the breadth of a domain can be quite extensive, and, as shown by Fiedler (2012), people unconsciously rely on large amounts of stimulus data when making decisions. Our participants might have relied on other information gained previously (e.g., from formal or informal education or vicarious observation) and other comparable experiences from different domains. A broader issue in the study of heuristic use by inexperienced decision-makers is that it leaves open the

question of their acquisition. As Koriat et al. (2009) has shown that even children develop metacognitive heuristics and apply them in novel contexts, a hypothesis for further study is that inexperienced decision-makers, like our participants, can develop and use heuristics not learned from direct experience, but potentially innately present or acquired in other fields.

These limitations can open future research opportunities. In particular, studies that employ additional psychometric tests and control groups, or more direct comparison between different decision-makers, can shed further light on the nature, antecedents, and acquisition of positive heuristics across other spheres of business decisions.

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Appendix I. Case: Angus meats

Instructions

- You can read the following case aloud or read it in your head.
- Once you reach the questions section, please start reading the short description and first question aloud.
- Start thinking aloud and explain to me how you would answer the first question.
- Once you think you have reached a satisfying answer for the first question, please proceed to the second question.
- There are no right or wrong answers, please feel free to express any view you might have.

Case: Angus Meats

Bernard Connolly launched Angus Meats in 1978 out of a small retail shop located very close to Christchurch's central business district. The shop was on busy main street with steady foot traffic and had a good floor layout. At the time, a retail meat shop with a high turnover was in demand when it came up for sale, as New Zealand's per capita meat consumption was one of the highest out of countries of the OECD.

A retail shop specialising in fresh meat appealed to Bernard, as he was the manager of a Canterbury meat company and had extensive experience in the meat industry. Bernard's choice to establish his new business venture proved to be the right one, as by 1990, Angus Meats had six retail outlets in the Christchurch area, and had also established a growing wholesale business.

Angus Meat's retail customers are generally over the age of 30 and are engaged in a wide variety of occupations. Most live in the urban areas around the outlets; however, a substantial number come from nearby rural areas. Customer's disposable incomes are as varied as their occupations, although in the last few years, sales have noticeably increased during the week that government benefits are paid. The customers of Angus Meats have been very loyal during the past 22 years and many of them have purchased their meat products from the company since its inception.

However, the management has noted that a number of the company's customers are becoming much more convenience conscious and are starting to purchase meat products from supermarkets. Angus Meats has several competitors but still considers the large supermarket chains to be a major threat.

Angus Meats also has a full-service wholesale operation that supplies products to restaurants, hotels, hospitals, schools, universities and retirement complexes in the greater Christchurch area. Angus Meats has a well-established distribution system and the company is recognised for its punctuality and reliability. Angus Meats has several competitors at the wholesale level but has continued to increase its

market share by offering high-quality products and superior service. In the last year, the company has had difficulty maintaining the quality of all of its supporting services as it is outgrowing its existing warehouse space.

Questions

1. Angus Meat has limited funds and you must balance between the futures of the two possible channels: the retail stores and the wholesale operation.

Will you:

- Favour the retail stores?
- Favour the wholesale operation?
- Try to balance both?
- How?

Please provide as much detail as possible.

2. Angus Meats is known to have a slightly higher price than supermarkets.

In the channel(s) you have chosen, do you plan on:

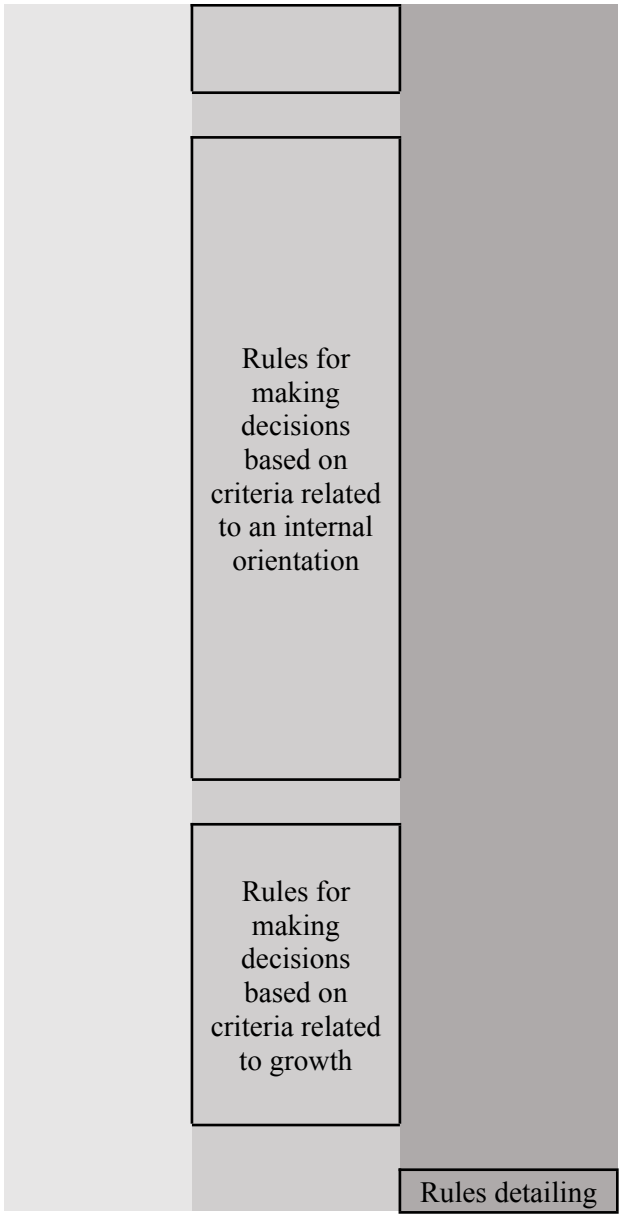
- Lowering the prices?
- Keeping the prices at the same level?
- Increasing the prices?

Please provide as much detail as possible.

Figure 1. Classification of heuristics

#	1st order concepts	2nd-order themes	Aggregate dimensions
7	Use available data	Approach: Data-driven	Rules for framing the decision
3	Look for financial data		
5	Imagine different scenarios	Approach: Intuition-driven	
3	Use intuition/instinct		
3	Consider the perceived potential of different options		
1	Consider what you are interested in		
10	Use your experience	Approach: Experience-driven	
1	Use vicarious experience from your industry		
21	Consider the perceived value for the customer	Criterion: Customers	Rules for making decisions based on criteria related to a market orientation
12	Assess market trends and forces		
10	Consider the demographic characteristics of customers		
7	Maintain or improve your customer relationships		
5	Enhance customer retention		
1	Ignore your customers' willingness to pay		
12	Avoid competition	Criterion: Competition	
6	Adapt your prices based on competition		
3	Mitigate competition through alliance or acquisition		
10	Align elements of the business model	Criterion:	

5	Consider the overall business-level strategy	Strategic consistency
3	Consider your mission/vision/values	
4	Minimise costs	Criterion: Cost
3	Price based on costs	
1	Maximise the sales per fixed costs	
5	Price based on differentiation	Criterion: Product
1	Pricing is not relevant for commodities	
1	The product is more important than the channels	
11	Align the scope of your activities with what you can manage / focus on	Criterion: Manageable
3	Abandon unsuccessful activities	
2	Favor simple/easy options to manage	
2	Minimise perceived risk	
2	Consider the long-term sustainability of potential options	
7	Make use of your resources and capabilities	Criterion: Resources & Capabilities
5	Maintain your resources and capabilities	
2	Keep a high level of employee satisfaction and involvement	
2	Consider your current financial situation	
12	Favor options currently contributing to growth (absolute or relative)	Criterion: Growth
6	Favor options with perceived future growth (absolute or relative)	
4	Favor options that open new opportunities for growth	
3	Favor scalable options	
8	Maximise revenue	Criterion: Revenue & Profit
5	Stabilise revenue	
6	Maximise profit	
5	Differentiate your offering when pricing higher	Elaboration on the



2	Re-allocate resources following the decision	decision	the implementation of chosen decisions
1	Innovate through changes		
3	Test a decision during implementation	Assessment of the decision	
2	Test a decision before implementation		
1	Don't change prices if the company is in a transition period	Conditions of application of the decision	
1	Keep the option to change prices if needed		
1	Increase prices if you can combine convenience and higher quality		

Table 1. Experience of participants

Participant	Age (at time of interview)	Business school education	Experience (Employed)	Experience (Self-employed)
1	20	Y	Inexperienced	Inexperienced
2	23	Y	Inexperienced	Little experience
3	18	Y	Little experience	Inexperienced
4	26	Y	Little experience	Inexperienced
5	20	N	Inexperienced	Inexperienced
6	19	N	Inexperienced	Inexperienced
7	22	Y	Little experience	Inexperienced
8	24	N	Inexperienced	Inexperienced
9	29	Y	**Experienced**	Little experience
10	29	N	Inexperienced	Little experience
11	20	Y	Inexperienced	Inexperienced
12	19	N	Inexperienced	Inexperienced
13	19	Y	Inexperienced	Inexperienced
14	23	N	Inexperienced	Inexperienced
15	25	Y	Inexperienced	Little experience
16	24	Y	Little experience	Little experience
17	21	Y	Little experience	Inexperienced
18	26	Y	**Experienced**	**Experienced**
19	28	N	Inexperienced	Inexperienced
20	19	N	Inexperienced	Little experience
21	27	Y	Little experience	Inexperienced
22	28	Y	**Experienced**	Inexperienced
23	26	N	Inexperienced	Little experience
24	18	Y	Inexperienced	Little experience
25	29	N	Inexperienced	Inexperienced

Experience (employed):	**Experience (Self-employed):**
Inexperienced: No professional experience **Little experience**: Some (<3 years) professional experience in a domain-specific position **Experienced**: More than 3 years in a domain-specific position	**Inexperienced**: No previous entrepreneurial experience **Little experience**: Some entrepreneurial experience but never launched a company that is either profitable or meeting its initial objectives **Experienced**: Founded at least one company that is either profitable or meeting its initial objectives

Table 2. Heuristics inferred from transcripts and corresponding first-order categories.

Extracts from transcript	Inferred heuristics	1st order concepts
"So for the first question, I'd probably favour the retail stores, because at the time, there's a trend towards retail stores being high in demand, and there's always a steady level of income coming through because there's customer loyalty and everything. "	Follow market trends	Assess market trends and forces
	Stabilise revenue	Stabilise revenue
"Okay, so the key to this stuff, you always want to focus on one, I always believe. So the decision about this, whether you go with retail or the wholesale, now I'm not saying neglect the other one completely but if you try and give 100 percent attention to two things, you give nothing basically."	Focus on one channel only	Align the scope of your activities with what you can manage / focus on
"My view is maybe looking at kind of societal trends as well, it seems like retail outlets are probably more of a risky venture and being a bit of a risk-averse person I might go for the wholesale operation."	Consider societal trends	Assess market trends and forces
	Favour the less risky channel	Minimise perceived risk
"Even like, yeah, like Apple, what's the difference, what functionally does an iPhone do that an android does not? Nothing, but you will pay 300, 400 dollars more for it because it says Apple, and because it's more expensive there's a stigma attached with that. Now I know eating a steak is a little bit different, but you're still serving up prime, expensive steak to your friends. Now that is, there's a status associated with that and people love to look like they're the shit, excuse my language. So increase the price, it'll do that."	Price at a premium to allow your customers to signal their financial status	Consider the perceived value for the customer
"Right, actually it relates quite well to our service also because we work with customers as well as we're connected with a lot of wholesale stores."	Relate the situation to your experience	Use your experience

Table 3. Criteria considered by participants when deciding on channel and pricing.

Criteria	# (Channel)	# (Pricing)	# (Total)
Customer	30	26	56
Growth (absolute or market share)	18	7	25
Competition	11	10	21
Manageability / Sustainability	20	0	20
Revenue / Profit	11	8	19
Strategic consistency	9	9	18
Resources & Capabilities	7	9	16
Cost	5	3	8
Product	4	3	7