Market-based:
Focus on customer preferences

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1. Introduction

The housing market is made up of various sub segments. In the case of choosing a house, the choice reflects the joint influences of preference, market conditions, regulations, availability and internal and external personal factors such as life-style and social class. Housing fulfills a basic human need for shelter and person-al care. Housing is also important for individuals because a house is often used as a home. Thus, it is connected to family life and other domains of life. For most home owners housing is also a durable and costly financial consumption good as well as an investment.

In Finland, Norway and Sweden, housing development and housing production has become more market driven over the recent years. Detached houses make up a substantial share of the dwellings. But there are some regional differences between the three countries in the structure of the housing stock, cf. Table 1 and Figure 1.

Table **1**: Total housing stock in the Nordic countries, number of dwelling-units, 2006-2011 (Statistics Sweden 2012, Statistics Finland 2012, Statistics Norway 2012).

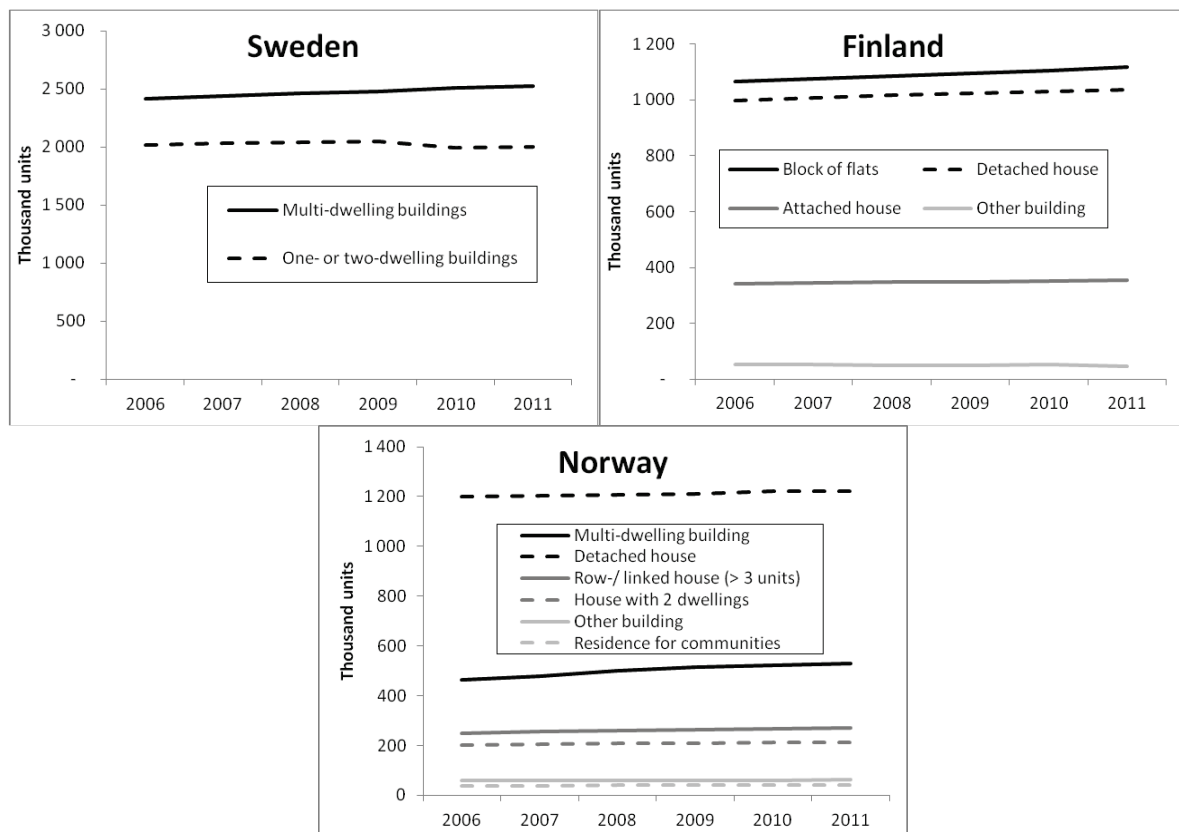|	2006	2007	2008	2009	2010	2011
Total SE	4 435 903	4 469 772	4 503 041	4 526 625	4 508 373	4 524 292
Total FI	2 453 826	2 476 505	2 499 332	2 517 393	2 537 197	2 556 068
Total NO	2 214 770	2 242 651	2 274 362	2 300 739	2 323 925	2 343 010

Figure **1**: Swedish, Finnish and Norwegian housing stock, 2006-2011 (Statistics Sweden 2012, Statistics Finland 2012, Statistics Norway 2012).

In Finland, Norway and Sweden, detached houses are commonly light weight wood frame constructions. Wood construction has a large market share in single family houses, cf. Figures 2 and 3. When it comes to multi-dwelling buildings such as flats and multi-storey buildings, the use of wood in load bearing structures is not as common. Most dwellings in urban areas are multi-storey multi-family houses, and the market share for wood construction is therefore lower in urban areas than in sub-urban and rural areas.
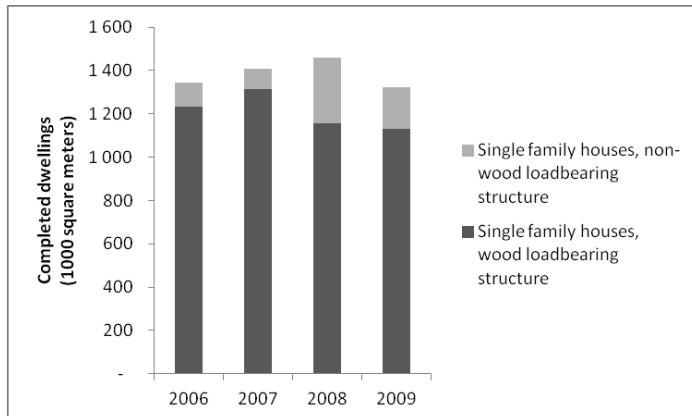

Figure 2: Market share of wood as loadbearing material in Norwegian single family houses (Nyrud et al. 2011).
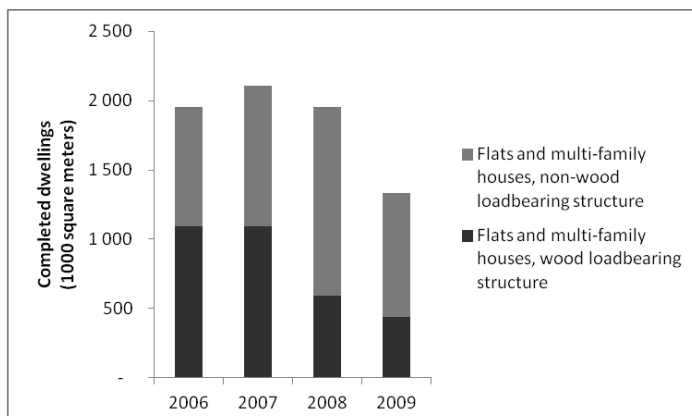

Figure 3: Market share of wood as loadbearing material in Norwegian multi-family houses (Nyrud et al. 2011).

The housing construction industry has been defined as a complex products and systems industry (Nord et al. 2011). Communication between actors has traditionally been constrained, regulated by either standards or regulations or contracts resulting from competitive tendering. Consumer preference analysis can help communicating the needs and wishes of end users to actors in the planning and construction process.

2.   Consumer preferences

The choice of a consumer, and thus the individual demand for a given product, is determined by his or her preferences (needs, tastes and desires) as well as a limited budget. Several approaches have been proposed for conducting consumer research. Traditional consumer behavior theories are frequently based on the assumption that consumers demand characteristics of products rather than spe-

cific products. Thus, surveying consumers' attitudes towards a product and iden-tifying salient product attributes provides information that can be used to predict the choice of consumers.

Customer and user perspectives have gained increased attention in research, development and innovation activities among the real estate and construction enterprises. Previous research has indicated that real estate sector has trouble in transferring commercial requirements upwards in the value chains (Levander, 2010).

A simple model of buyer behavior is shown in Figure 4. The consumer is appar-ently subject to stimuli from marketing as well as external sources such as eco-nomic, political, societal and technological aspects.
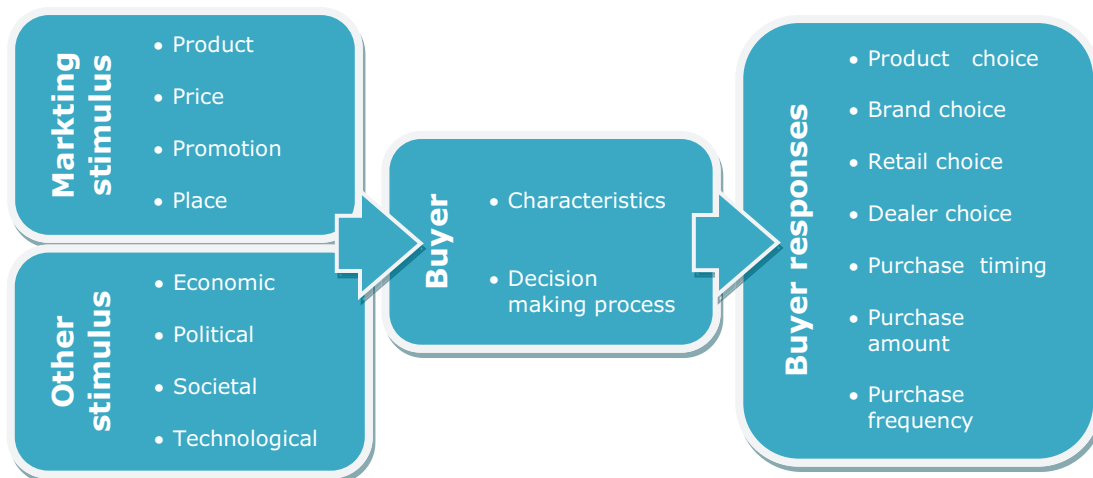

Figure 4:   Stimulus-response model of buyer behavior (Kotler 2001).

Consumer's preferences are influenced by cultural, social, personal and psycho-logical factors, cf. Figure 5.
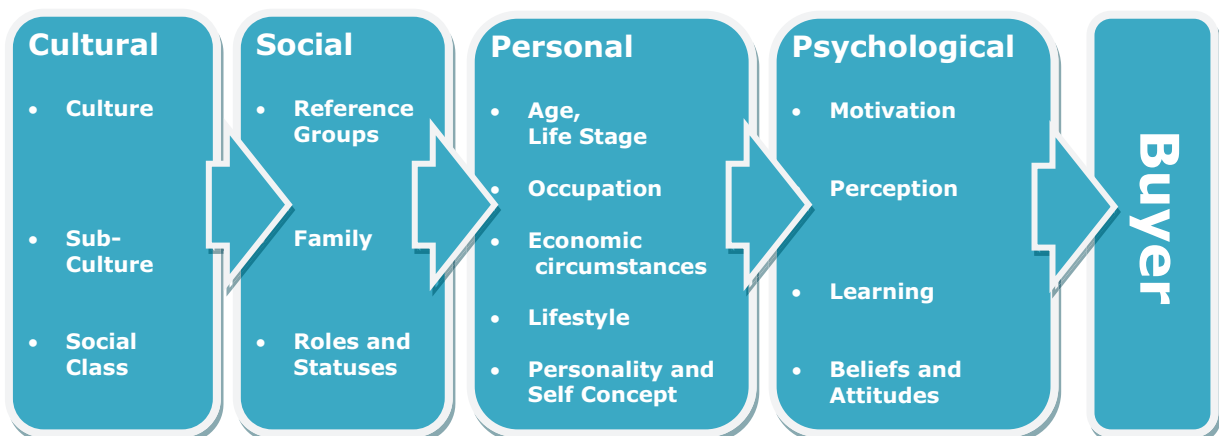

Figure 5:   Factors influencing buyer behavior (Kotler 2001).

Gibler and Nelson (2003) described determinants of consumer behavior in the real estate market. They distinguish between internal determinants, that are specific to the individual, and external determinants, that are external of the individual, cf. Figure 6.
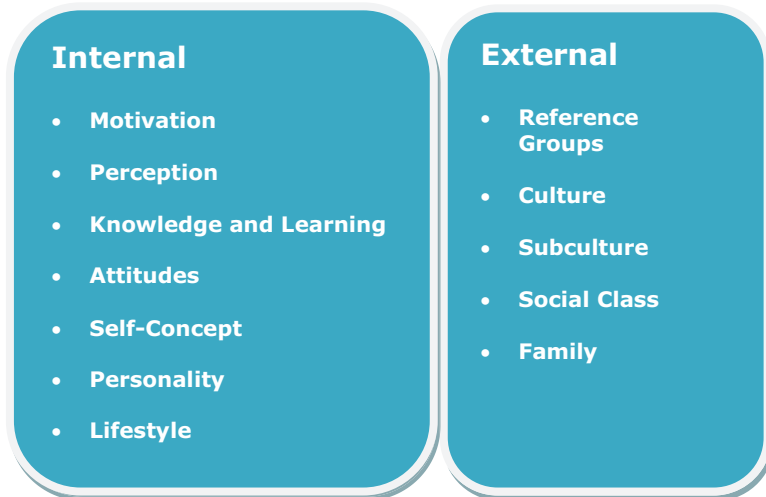
Internal

- **Motivation**
- **Perception**
- **Knowledge and Learning**
- **Attitudes**
- **Self-Concept**
- **Personality**
- **Lifestyle**

External

- **Reference Groups**
- **Culture**
- **Subculture**
- **Social Class**
- **Family**

Figure 6: Determinants of Consumer Behavior in the real estate market (adapted from Gibler and Nelson 2003).

2.1 Actors in the design and construction process

In the design and construction process there are several actors in different stages of the process, cf. Figure 7. Norwegian research among decision makers in the construction industry indicates that key actors tend to prefer materials that they have used, thus reducing risks and planning resources required. Most architects are positive towards using wood as a structural material in urban construction projects due to favourable aesthetic and environmental characteristics. Contractors and engineers tend to be more reluctant to use wood because of the fear of exceeding budgets (Denizou et al. 2007, Bysheim and Nyrud 2009).
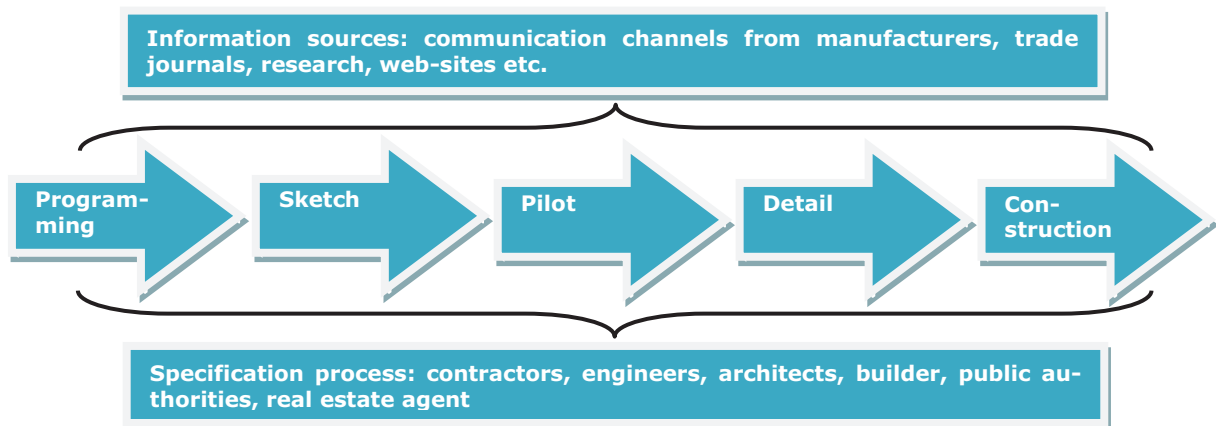
Information sources: communication channels from manufacturers, trade journals, research, web-sites etc.

Program-ming → **Sketch** → **Pilot** → **Detail** → **Con-struction**

Specification process: contractors, engineers, architects, builder, public authorities, real estate agent

Figure 7: The design and construction process (Nyrud et al. 2011).

2.2 Marketing aspects: Methods and factors that matter for housing

Several methods to evaluate and measure preferences for housing have been applied, cf. Table 2. In general, the methods provide a good basis for evaluating consumer preferences, but all methods have advantages and disadvantages.

Table 2. Methods and analytical techniques for measuring housing preference and housing choice (Boumeester 2011).

Methods and analytical techniques	Goal
Traditional Housing Demand Research method	To obtain accurate insight into the current and future demand for housing, in a quantitative as well as in a qualitative sense
Decision Plan Nets method	To reveal people's choice process based on individual mixes of dwelling

	(environment) characteristics that are deemed essential, those that can be compensated for and those that are deemed irrelevant
Meaning Structures method	To assess what people's housing preferences are and why they have these preferences
Multi-Attribute Utility method	To make a rational choice between available alternatives based on the dwelling profile that yields the most utility
Conjoint Analysis method	To estimate a utility function that can be used to predict the overall utility of residential profiles and thus to compare residential alternatives in terms of peoples' preferences
Residential Images method	To examine preferences for new alternatives holistically
Lifestyle method	To build/restructure/distribute dwellings according to lifestyle group preferences
Neoclassical economic analysis	To rank and assess the preferences for alternatives
Longitudinal analysis	question how characteristics or circumstances at one point in time shape individual outcomes or decisions at a later point in time

When it comes to the factors influencing consumer preferences Boumeester (2011) presents an overview of features that are often used in previous housing preference research, cf. Table 3. Based on consumer analyses, it is possible to identify consumer segments and develop products for these.

Table 3. The most often utilized dwelling and environment features in housing preference research (Boumeester 2011).

Dwelling features	Environment features
Type of dwelling	Type and size of local council
Number of rooms	Type of neighborhood
Size of living room	Type of housing
Total usable surface area of dwelling	Period built
Backyard present?	Amenities in the neighborhood
Size of backyard	Public transport
Presence of balcony	Green and water
Size of balcony	Semipublic area (parking, etc.)
Storage space	Parking places
Tenure	Safety, including traffic
Price	Space, building density
Architecture	Urban development design for the neighborhood
Quality/level of maintenance	
Year built/period built	
Private parking place	

3. Conclusions

Knowledge about the needs of consumers can be used to identify opportunities for industry and manufacturers as well as segmenting customers into groups with similar needs and expectations. Clients, stakeholders and end users have different needs, preferences and attitudes in relation to residential buildings. Preference studies also provide inputs for policy makers and decision-makers in the residential construction industry.

Developing industrial construction concepts is an area of priority in the Nordic countries. There is a push to industrialize the housing market in order to achieve a number of advantageous outcomes: (1) improved overall quality, (2) cost efficiency, (3) resource efficiency and (4) shorter construction period.

In order to commercialize industrial housing, the industry should also pay attention to consumer preferences and needs. Results from preference studies can be used to develop future concepts and assess the future feasibility for business development.

Environmental values and sustainability are among the megatrends of Western consumer society. Housing is one the areas where sustainability is of key importance on the way to a future bio-economy. Sustainable building includes concepts such as eco-innovation and low-energy buildings, but also wider issues

comprising e.g. housing policy and urban planning. Increased focus on environmental issues constitutes an opportunity for the wood industry to market wood construction.

It must, however, be taken into consideration that stated preference is a relatively unconstrained evaluation of attractiveness. For example there are several factors that can limit the choice of housing, such as the budget of the household, government regulations or availability of dwellings.

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