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Innovation Uptakes: Understanding Consumer Contexts from the Perspective of Consumption

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Abstract

This paper considers a mechanism in which consumers make decisions to take up innovations and suggests that consumer innovation uptakes should be looked at from the consumption point of view. There is a gap in our knowledge of the way consumer cultures of consumption and lifestyles explain their decisions to adopt innovations, as existing research mainly looks at the technical functionalities and the effects of demographic and personality factors. People make small, conscious decisions everyday, and the multiplicity of these decisions contributes to their routines that consist of a number of inter-connected cultural elements and make up lifestyles. Lifestyles are therefore the way people use their resources; they are patterns of action that differentiate people and are sets of practices which make sense in a particular context. Thus, cultures of consumption help explain what people do, why they do it and what doing it means to them. So, a close examination of underlying values, such as meanings of consumption, its contexts and everyday practices, offers us a deeper understanding of the dynamics of consumption activities, and indeed of innovation adoption behaviour. This way, we can identify differences in people's values, attitudes towards an innovation and their innovation adoption behaviour, and provide a conceptualisation of innovation adoption and diffusion processes on the basis of differences in individual consumer values and behaviours.

1. Introduction

An innovation is an idea, practice or object that is perceived as new by a unit of adoption such as individuals and organisations, and is increasingly recognised as one of the key sources of the growth in the industry. As Rogers (2003 [1962], p.1) states in his book, *Diffusion of Innovations*, 'getting a new idea adopted, even though it has obvious advantages, is often very difficult. Many innovations require a lengthy period, often of many years, from the time they become available to the time they are widely adopted'. He then argues that diffusion research should focus more on the receivers of innovations (Rogers, 1976) and that the degree to which people adopt

new ideas (i.e. overt behavioural change, rather than cognitive change) has become the main dependent variable in diffusion research (Rogers, 2003). The issue this paper focuses on is how consumers come to adopt an innovation. For example, why do some people choose to adopt an iPod, rather than an MP3 player which is technological similar to the former? Why do some prefer to wear Nike's Air Max to other running shoes? These questions need to be answered not only by technical functions of the product, but also by consumers' ideas, situations and circumstances that relate to their adoption decisions. To make an innovation diffuse successfully, the innovation providers need to understand such consumer contexts, especially in this era when markets are increasingly segmenting and fragmenting and consumer requirements are becoming more diverse and specific (see Tidd et al., 2001; von Hippel, 2005). Furthermore, Rindova and Petkova (2007) talk of the gap between intended value, which is the value expected by producers and reflective of their intentions, and perceived value, which is the value expected by customers. As long as this gap exists, the returns on innovation may not be realised. Therefore, it is important to understand what consumers expect to achieve by adopting a particular innovation. Seen this way, consumers' adoption behaviour needs to be explored not only on the 'aggregative' level (adoption rate), but also on 'disaggregative' level (adoption decision) (Ostlund, 1974).

What, then, is happening behind the innovation adoption decision? Based on Max Weber's *Verstehen* (understanding and interpreting) approach, we attempt to understand how consumers' beliefs and norms affect their innovation adoption behaviours, and how these beliefs and norms eventually influence the diffusion of innovation. *Verstehen* is an approach that considers, through understanding subjective meaning in action, the processes in which human action acquires motivations. It is an interpretation of action that explains why the action is conducted by looking at the mechanism in which meaning is attached to the act. For example, why does a person close a door? The reason has to be considered from the actor's point of view, not the observer's viewpoint.

Weber (1972) presents four types of social action: traditional action that is routinised; affectional action that is led by emotional factors; value-rational action that is taken in order to achieve a 'valued goal'; and goal-instrumental action which is a planned and calculated action that is based on the consideration of its consequences and means to achieve it. The latter two are 'rational' in the sense that the decision is supported by clear awareness; in other words, they are social actions and behaviours rationally 'selected' by practitioners. When we attempt to understand why a particular behaviour is performed, we need to consider these different, but perhaps interrelated elements. Our task is therefore not simply to accept and justify adopters' actions, but to understand the meaning of these actions, including innovation adoption. This provides us with essential information with regard to the mechanism of consumer innovation adoption behaviours. For example, economic goals (goal-instrumental action) alone cannot determine consumers' innovation adoption behaviour. There are usually other motivational factors underlying adoption decisions, such as what people believe (value-rational action).

The present paper intends to deepen our understanding of the role of beliefs and norms that people have and to extend the current appreciation of the effect of economic reasoning. Our intention is to present a more holistic perspective to consumer innovation adoption. In order to do so, we initially review the literature of innovation adoption. We then look at the literature of consumption so that we can add more dynamic and emotive pictures to the current innovation adoption behaviour literature. Such a contextual understanding of adopters and their adoption behaviour will close the gap between producers intended value and consumers perceived value

and therefore give innovation producers an economic advantage, as consumers benefit from the innovation that offer useful performance (Rindova and Petkova, 2007).

2. Adopting innovation

Consumers take up an innovation for an economic advantage and cost benefit. But the take-off of an innovation is also linked to the way in which consumers see the innovation itself (Morrison, 2004). An individual's decision to (or not to) take up an innovation is not an instantaneous act, but a process that occurs over time and consists of a series of different actions (Rogers, 2003). Rogers identifies the five sequential stages in innovation adoption. An individual (1) gains the first knowledge of an innovation (the knowledge stage), (2) forms an attitude towards the innovation (the persuasion stage), (3) decides to adopt or reject (the decision stage), (4) implements the new idea (the implementation stage) and (5) confirms the decision (the confirmation stage). Prior to this innovation-decision process, there exist some conditions that bring consumers into the innovation-decision process in the first place, such as: consumers' previous experience, felt needs and problems, innovativeness and norms of the social systems. The innovation-decision process is therefore a social and psychological process. It is important for innovators to see how their consumers' attitudes towards a particular innovation is formed if they want their innovation to be adopted by consumers and diffused in the market.

In the second (persuasion) stage where an attitude towards the innovation is formed, an individual becomes more psychologically involved with the innovation, actively seeks information about it and decides what information is credible and how to interpret the information. It is at this stage that a general perception of the innovation is developed. The most important factors at this stage are potential adopters' perceptions of the characteristics (attributes) of the innovation. In his Innovation Diffusion Theory, Rogers (2003) argues that the perceived attributes of an innovation are an important explanation of the rate of adoption and that most of the variance in adoption rate (from 49 to 87 per cent) is explained by five attributes: relative advantage, compatibility, complexity, trialability and observability. Relative advantage is 'the degree to which an innovation is perceived as being better than the idea it supersedes' (ibid., p.229), and compatibility is 'the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adoption', especially with socio-cultural values, and beliefs, previously introduced ideas and/or client needs for the innovation (ibid., p.240). Rogers regards these two attributes as most important of the five. Other attributes are defined as follows. Complexity is 'the degree to which an innovation is perceived as relatively difficult to understand and use' (ibid., p.257); trialability is the degree to which an innovation may be experimented with on a limited basis (ibid., p.258); and observability is 'the degree to which the results of an innovation are visible to others' (ibid., p. 258).

So, the perception of these attributes affects individuals' decision to (or not to) adopt an innovation. Ostlund (1974) showed in his study of innovation attributes, perceptual variables (consumer perceptions of products) are better predictors of purchase outcome than adopters' personal characteristics, such as venturesomeness, cosmopolitanism, self-confidence in problem-solving, family income, education, age, etc. In addition, given the fact that innovations, such as new technologies, involve an element of uncertainty, other researchers have added perceived risk as an expected probability of economic or social loss resulting from innovation to Roger's five innovation attributes (Labay and Kinnear, 1981; Ostlund, 1974).

Nonetheless, consumers' characteristics do affect the way their perception of an innovation (and its attributes) gets translated into actual adoption behaviour (Rogers, 2003). In their decision to accept a new idea, adopters' 'innovativeness' is seen as playing an important role. Rogers defines innovativeness as the relative time of adoption, i.e. the degree to which an individual or other unit of adoption is leading in adopting new ideas in comparison to other members of a social system. He categorises innovation adopters into groups according to the innovativeness of adopters: (1) innovators, who are venturesome, (2) early adopters, who are a role model for many members of a social system, (3) early majority, who are deliberate, (4) late majority, who are sceptical, and (5) laggards, who are traditional. Research shows that many important differences exist between the adopter groups in terms of socio-economic status, personality and communication behaviour. For example, compared to later adopters, early adopters have more years of formal education, higher social status (measured by income, level of living, occupational prestige, etc.) and higher aspirations; they are better able to cope with uncertainty, more favourable towards science and less fatalistic, and have more social participation and more exposure to mass media. They are better integrated in the local systems and have the highest degree of opinion leadership. These distinctive characteristics of consumers are related to the rate of innovation diffusion and therefore can be utilised for a business strategy (ibid.).

While Rogers' model, and models that build on Rogers', consider the characteristics of innovation in general, the Technology Acceptance Model (TAM) focuses on the utility aspects of an innovation to explain how consumers come to accept a particular technology such as a personal computer. A number of factors influence people's decision about if and how they will use the technology, but most important are: perceived usefulness and perceived ease of use (Bagozzi et al., 1992; Davis et al., 1989). Perceived usefulness is defined as 'the degree to which a person believes that using a particular system would enhance his or her performance' and perceived ease of use as 'the degree to which a person believes that using a particular system would be free from effort' (Davis, 1989, p.320).

TAM adapts the generics of Ajzen and Fishbein's (1980) Theory of Reasoned Action (TRA). TRA provides strong theoretical and empirical evidence that only situation-specific cognition is a direct determinant of a specific behaviour. There are three components in the conceptualisation of TRA: attitude, subjective norm and behavioural intention. TRA firstly sees that a person's attitude towards a particular behaviour (the adoption of an innovation, in our case) is determined by his/her belief about the consequences of performing the behaviour (e.g. this behaviour will bring certain consequence), and this will result in favourable or unfavourable attitudes towards, the innovation. Secondly, a person's subjective norm is determined by his/her perceived expectations of a specific reference group such as family and society (norms), together with the person's motivation to comply with these expectations. This will result in perceived pressure from the group and therefore become subjective norms. Thus, an individual's behaviours can be predicted by (a) their attitude towards a particular behaviour (e.g. the adoption of an innovation) and (b) how the individual thinks other people would think of them if they perform the behaviour. Adapting to this perspective, TAM replaces the TRA's attitudinal determinants with two variables specific to the technology acceptance context, namely consumers' perception of the usefulness and ease of use of an innovation. TAM sees these two variables form the intention to adopt (Davis et al., 1989). TAM's emphasis on utility confirms the importance of the relative advantage (usefulness) and complexity (ease of use) attributes of Rogers' Diffusion Theory.

The process of consumers' beliefs and norms forms attitudes towards certain behaviour and the lead to the performance of the behaviour has been studied in social psychology over the last decades. Ajzen's (1991) Theory of Planned Behaviour (TPB) extends TRA by incorporating the fact that there are constraints in reality and that intentions will not necessarily be translated into behaviour. TPB explains the relationships between people's beliefs and norms, and attitudes towards behaviour, and behaviour itself. In the conceptualisation of these relationships, TPB introduces another variable, controlled beliefs, in addition to the behavioural beliefs and normative beliefs of the TRA model. Controlled beliefs are a person's perception as to how easy or difficult it is to perform the behaviour in relation to his/her abilities, resources and opportunities, which will encourage or hinder the performance of the behaviour. These correspond to the compatibility and complexity attributes of Roger's model, and ease of use of TAM.

A slightly different in approach is Rindova and Petkova's (2007) conceptual work on the role of product form design as an influencer on the processes involved in the perception of value (a product's worth). In their research as to how the value of novel technologies are perceived and constructed, they put forward a framework that the formation of consumers' perceptions of value are based on their cognitive and emotional responses to the configuration of product characteristics which are created through design choices with functional (degree of technological change), symbolic (visual similarity to existing products) and aesthetic (visual appeal) dimensions. They claim that innovation researchers should look at not only the functional attributes of new products, but also the role of visual effects of product design. In turn, with a better understanding of how product form design renders technologies more meaningful, innovating firms can influence consumers' perceptions of value by generating symbolic and aesthetic properties (ibid.). Their own example is Sony's home entertainment robot, AIBO, the pet dog. Having received an ambivalent reception in the US, Sony changed the design of the robot from a dog to a human in the hope of shifting consumers' perceptions. In light of Roger's theory, these perceptions based on technological, visual and aesthetic properties affect the stage where consumers form their opinions about an innovation, i.e. the development of 'schemas' about how to interpret the new technology's value, to use Rindova and Petkova's expression. Rindova and Petkova see incongruity (or incompatibility in Rogers' theory) as a cognitive challenge, as a highly novel product does not fit in with the existing schema. Because incongruity necessitates a change in the existing schema and schema change is effortful and difficult, the process of incongruity resolution is emotionally charged. Successful resolution expands possibilities, whereas unsuccessful incongruity resolution leads to rejection of innovation (ibid.).

What is common among these approaches is the message that the way potential adopters perceive innovations is needed to be understood by innovation providers in order for their innovations to get adopted and eventually diffused. These perspectives are useful, but rather a static picture of adopters and adoption decisions. In light of Weber's tradition of *Verstehen* and his theory of social action, more dynamic, contextual and emotive pictures of adoption behaviour are necessary to understand consumers' adoption (or non-adoption) behaviour. We will therefore consider where consumers' judgements on innovations, including product functions and aesthetic elements, come from and how motivations to adopt innovations are formed. In this attempt of broadening the current knowledge about innovation adoption, we now introduce the consumption literature.

3. Consuming innovation

The decision to adopt an innovation, such as a new technology, is indeed a consumption act. To decide to purchase a new computer or to put a solar panel on the roof is the consumption of innovation, as well the adoption of innovation. What, then, is consumption? Warde (2005, p.137) offers us a useful definition of consumption: 'a process whereby agents engage in appropriation and appreciation, whether for utilitarian, expressive or contemplative purposes, of goods, services, performances, information or ambience, whether purchased or not, over which the agent has some degree of discretion'. He stresses that the symbolic significance and the use of items should get proper attention. Although economists, for example, tend to be concerned with the terms of market exchange, 'consumption cannot be reduced to demand'; it requires 'examinations as an integral part of most spheres of daily life' (ibid., p.137).

In the light of above definition, the consumption literature offers three relevant issues, which are interrelated with each other: meanings, contexts and practices. Consumption activities carry symbolic meanings for the actor, such as the expression of images, identity and cultural references. As consumption is embedded in people's daily lives, meaning emerges out of the ways people behave and act, therefore people's everyday contexts and practices from which meaning arises need to be understood.

First, people's lifestyles are the way they use their resources (e.g. money, time, space, etc.), rather than the resources themselves. In sociology, lifestyles are seen as patterns of action and sets of practices that differentiate people and therefore act as a modern form of social grouping (Chaney, 1996). The purchase of new goods, which do the same task as the existing purchases, such as digital cameras and MP3 players, is considered to represent both personal and social meanings, because aspiring consumers 'adopt a learning mode towards consumption and the cultivation of a lifestyle' (Featherstone, 1991, p.19). Consumption is therefore used to discriminate people's values, identities and memberships (Slater, 1997): consumers communicate their cultural values (beliefs and norms) and social relations through goods they possess.

Cultural values are relatively stable, inflexible and enduring. They are a kind of beliefs that people hold about what is right, good and desirable and are therefore considered to be principles that 'guide' the formation of attitudes and actions. People's cultural values are seen to be established through their backgrounds, societal experiences and personality (see Gutman, 1982; Kluckhohn, 1951; Rokeach, 1973). Thus, social environments are particularly relevant in forming people's values, which can be a societal perspective or a perspective of much smaller groups of people like family and peer groups. Consumption activities, in turn, express these beliefs and norms. This view suggests that people's lifestyles (or patterns of consumption) significantly differ from mere expenditure patterns of time and money, which is the way lifestyles tend to be seen in the traditional economics literature (e.g. Weber and Perrels, 2000). Rather, consumption is a tool to symbolise social and personal identity, including goals, status, memories, relationships, etc.; it is 'achieved' identity, rather than 'ascribed' identity (Csikszentmihalyi and Rochberg-Halton, 1981; Dittmar, 1992; McCracken, 1986). This shows that consumption is more than a utilitarian activity (Appadurai, 1986; Lash and Urry, 1994; McCracken, 1986) and that material objects have functional values (Gutman, 1982).

Second, many of people's consumption activities take place in their everyday practices that are ordinary and mundane (see Shove, 2003) and thus the meaning of consumption has to be understood in relation to consumers' everyday context.

Holt (1997) criticises the existing analysis of lifestyles and consumption for the general lack of focus on the consumers' context. He argues that some approaches presume that lifestyles are ahistorical and relatively stable, treating them as behavioural expressions of personality and relying on quantitative difference between social groups. Similarly, Hawkins (1998) states that the totality of the individual's thoughts and feelings are formed through social actions that are influenced by such factors as cultures and sub-cultures (family, social groups, etc.) as well as personality.

Meanings are constructed by the ways people act in particular contexts and therefore do not exist separately from these contexts (Holt, 1997, p.329): 'chains of meanings exist as multiple and overlapping resources from which social actors select, combine, and juxtapose'. In this regard, Holt claims that the analysis of lifestyles and consumption research needs more comprehensive approaches that consider the contextual details and the dynamics of consumption practices, as contextual differences have significant impacts on consumption activities.

This social constructionist perspective is rather relevant to understanding the consumption of innovation. The basic idea of social constructionism is the relativity of knowledge and reality: knowledge and reality are relative to, or related to, the social circumstances and environment under which they arise. Therefore, what a person regards as reality is not absolute: it is socially constructed and exists in a particular social situation and is only understandable within the terms of that social situation. In other words, people only comprehend experiences of reality in relation to the concepts and categories that they have available. As Berger and Luckmann (1966, p.15) put it, 'what is real to a Tibetan monk may not be 'real' to an American businessman'. Social constructionist perspectives emphasise the social origins of knowledge, rejecting the uni-linear determinism of mainstream Social Cognition. The main arguments are that people perceive the world the way in which they do, because they participate in socially shared practices and interact with the world, and that through direct and symbolic social interchanges meaning systems are transmitted, reproduced and transformed. Their knowledge and conceptual repertoire form the basis for how they understand their world (Dittmar, 1992). Thus, there are many ways to understand the world; people have different experiences of reality and each experience is equally real to the person who is experiencing it. One's understanding of the world is a social product. An understanding of the world is different across time and culture, because the world requires an interacting group of people such as a society (Gergen, 1985). Hence, the social world, including consumption, cannot be perceived and understood in a decontextualised way; it has to be interpreted through the categories and concepts that people use to appreciate it.

Third, people make small, conscious decisions everyday, and the multiplicity of such decisions, for example, what to eat, what to wear and how to conduct at work, contribute to the practices that make up the person's lifestyle (Giddens, 1991). Practices are routinised behaviours that consist of a number of inter-connected cultural elements (Reckwitz, 2002). Warde (2005, p.145) argues that practice 'requires that competent practitioners will avail themselves of the requisite services, possess and command the capability to manipulate the appropriate tools and devote a suitable level of attention to the conduct of the practice'. Based on Schatzki (1996), Warde (2005, p.134) puts forward the idea that understandings (knowing what to do and how to do it in a certain context), procedures (rules, principles, instructions, etc.) and engagements (e.g. structures that embrace tasks, purposes, beliefs, emotions, etc.) are three components of a practice. He uses practices as a theoretical framework for analysing consumption. His own example is individual travelling by automobile, which involves equipment and skills, and also shared, but differentiated, understandings, procedures and engagement. He sees that it is practices that create

wants, rather than individual desires. In other words, wants are the consequence of engagement in the practice of a particular activity: 'it is the fact of engagement in the practices, rather than any personal decision about a course of conduct, that explains the nature and process of consumption' (ibid., p.138).

Shove and Pantzer (2005, p.45), on the other hand, see that practices involve the 'active integration' of materials (equipment and object), meanings (images) and forms of competence (skills). They argue that the way things are acquired, appropriated and used involves not only consumption, but also reproduction of a particular practice. Shove and Pantzer say: 'we need to conceptualize consumers not as users but as active and creative practitioners and appropriation as but one dimension of the reproduction of practice' (ibid., p.45). They use as an example Nordic walking. Their focus is not on the objects (walking sticks), but on the practice of which those walking sticks are a part: walkers do not simply use or appropriate the sticks, but also reproduce the walking by using them. The rules and conventions of doing the walking are closely linked to culture and situations and are produced and reproduced by the members of the community. Thus, the walking embodies the forms of competence and know-how which are necessary for performing the walk. Similarly, the walk itself is a process through which images and ideologies, such as well-being, exercise, nature and freedom, are reproduced; and the walking relies on a set of equipment. When an activity (or an innovation) is taken up in a different context, new practices will gain new elements according to the new circumstances, in conjunction with existing ones (ibid.).

Both views are pertinent to the consumption of innovation. As 'the principal steering device of consumption' (Warde, 2005, p.145), practices can offer explanations for innovation consumption behaviours, presenting cultural and personal contexts from which people's demands for an innovation arise. Practices clarify what the performing of a particular consumption activity, and the use of a particular array of equipment, represent in terms of the skills and competence the activity requires, the images it projects, and the understandings, procedures and engagements it involves. People's wishes to adopt and use an innovation are closely related to their current practices, including institutional configurations, such as routines, traditions, customs and conventions, which are often tacit and embedded in everyday life. People can be highly path-dependent and rely on these established ways of life. Adoption decisions come about from within certain practices with the perspective of its continuation (or reproduction). So, an examination of consumers' everyday practices offers a better understanding of the dynamics of consumption and adoption activities, than the analysis of the way objects are acquired and used.

The existing innovation diffusion literature has not fully utilised the perspectives that consumption theories offer. Consumers' willingness to adopt new products and technologies has been examined mainly through dimensions of consumer behavioural constructs. These include novelty-seeking, risk-taking (Goldsmith and Hofacker, 1991; Midgley and Dowling, 1978), creativity and previous experiences (Dickerson and Gentry, 1983). Similar to behavioural constructs are psychographic descriptions of consumers, such as activities, interests and opinions (e.g. fashion conscious, disliking housekeeping, sports spectator and dieter; Wells and Tigert, 1971) and these were used to characterise adopters and non-adopters and see the difference (e.g. Dickerson and Gentry, 1983). Also, some researchers used time spent on a particular consumption activity and attitudes towards a particular product experiences as independent variables in adoption research (e.g. Dickerson and Gentry, 1983). Others looked at the effects of demographic attributes, such as age, marital status, occupation, income, homeownership and geographic region on innovation adoption behaviour (Im et al., 2003; Manning et al., 1995; Steenkamp et

al., 1999; Tellis et al., unpublished paper). Closer to our approach is Hirshman's (1982) discussion on symbolism as a source for the generation of innovations. An innovation generated primarily through symbolic changes communicates a different social meaning than it did previously. Such symbolic innovation can be adopted when consumers find an innovation (e.g. hairstyle) is compatible with their self-identity and image. Overall, important as demographic and personal variables are, they are rather 'static' pictures of consumers and do not explain 'how' consumers form their opinions about a particular product and service.

Seen this way, what is missing in the existing approaches to innovation adoption is that the adoption is embedded in social practices and therefore has a cultural dimension to it. Rogers indeed (2003) argues that the incompatibility of an innovation with socio-cultural values and beliefs, and previously introduced ideas, can block its adoption: the misfit between existing practices and an innovation does delay the rate of adoption. Such cultural contexts in which adoption behaviour arises are an important element in understanding the adoption of innovation. Psychographic variables developed by Wells and Tigert (1971) do provide a basis for understanding 'who' wants 'what' in relation to patterns of consumers' behaviours and preferences. But as Holt (1997) argues, they are rather non-contextual expressions of personality, and innovation providers need to uncover 'why' people prefer and want certain things if they want their innovations to be adopted and eventually diffused.

Furthermore, lifestyles and cultures of consumption can deepen the existing understanding of adopter characteristics by adding contextual insights of adopters. As mentioned earlier, lifestyles are a modern form of social grouping. Based on the way people decide to consume or adopt, they are categorised into lifestyles groups, and each adopter group can be characterised by their beliefs, attitudes and behaviour. This way, the way adopters' contextual differences influence their innovation adoption behaviour can be theoretically explained; and it is possible to identify groups of consumers that share cultural values and consumption practices, i.e. contexts of consumption, and who are therefore likely to perceive innovations similarly and adopt innovations in similar ways.

4. Combining adoption and consumption perspectives: towards a new approach

In order to understand how consumers form their attitudes towards an innovation and eventually adopt the innovation, we put the above two disciplinary traditions together. This will help us investigate why one product gets chosen over another one that has technological similarity and the same product functions: the meaning that is attached to the product, the context in which the adoption decision was made, and the practices from which such a want arises will be understood.

Figure 1 presents the way we conceptualise the relationship between consumer beliefs and norms, innovation adoption, and diffusion. The framework shows the mechanism of how individual consumers make decisions to take up an innovation and how such decisions aggregate and lead to the diffusion at a market level. It also shows how consumers' motivations to adopt an innovation relate to their willingness to pay (extra). Being inspired by Coleman (1990), our framework has four conceptual phases.

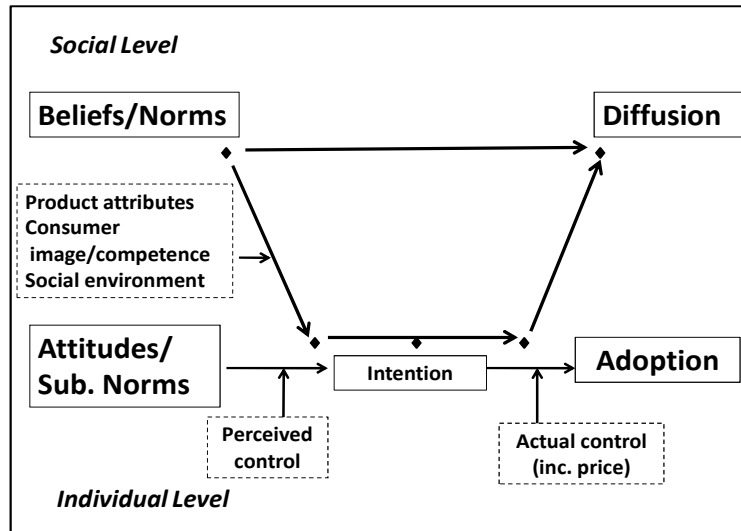


Figure 1. Conceptual Framework on Innovation Adoption/Diffusion

(1) From Beliefs/Norms to Attitudes

The first phase represents how people's beliefs and norms affect their perceptions and attitudes (Bettman, 1979; Rokeach, 1973) towards an innovation. In the process of beliefs and norms resulting in attitudes towards an innovation, there are a few factors affecting the process. As studied in innovation research, consumers' perceptions about product attributes, such as compatibility to current practices and past experiences, relative advantage/usefulness of adopting it, and complexity or ease of use, have great impacts on the forming of attitudes towards an innovation. As studied in consumption research, meaning attached to the adoption (e.g. certain images, social and personal identity and competence), social contexts (e.g. group membership and pressure) and practices from which a want for a certain innovation arises (e.g. working with a computer) should be taken into consideration in understanding the formation of attitudes.

For example, a belief that pro-environmental behaviour makes a difference, and a social norm that we have to do something about climate change, may influence and form one's attitudes towards pro-environment products or activities. Similarly, a norm of a social group such as a youth group (e.g. being 'cool') influences the group members' subjective norms (e.g. 'I have to have it') and attitudes towards a particular product.

(2) From Attitudes to Adoption Behaviour

The second phase is the stage where people's attitudes are translated into their decision to take up the innovation. Ajzen's (1991) Theory of Planned Behaviour (mentioned above) assumes that human behaviour is rationally selected by practitioners, as the decision is made intentionally based on a particular goal to achieve. He regards intention as immediate antecedent of behaviour, stating that attitudes towards behaviour (adoption), subjective norms and perceived behavioural controls lead to the formation of intention.

It is useful to consider the perception of behavioural control at this stage. This is because the way people actually behave (i.e. innovation adoption) may not be consistent with their attitudes towards an innovation (a cognitive-behavioural gap).

For example, an individual who is concerned about the environment and has a positive perception about a pro-environmental innovation, such as photo-voltaic panels, does not necessarily decide to take up the innovation. Kahneman (2000) and Simon (1982) call this gap 'bounded rationality', in which psychological or subjective elements, as well as resource restrictions (e.g. finance and time), interfere with rational choice. Weber (1972) does acknowledge that human action has affective and habitual aspects, as well as rational (goal- and value-oriented) dimensions. These affective and habitual actions may not be rational and can affect the relationship between attitudes and behaviour. For example, a recycling activity might not be achieved because of time-pressure or out of habit of throwing things without separating recyclable objects. Thus, if there is a gap between perception and adoption, we need to investigate what is interfering with the translation from attitude into behaviour.

Further, in order for attitudes to become intention, and for intention to become adoption behaviour, to the extent that people are realistic in their judgements of difficulty to perform a particular adoption, behaviour needs to be considered. In this, the perception of behavioural control serves as 'a proxy for actual control and contribute to the prediction of the behaviour in question' (Bamberg, 2003, p.23). Behavioural and actual control includes economic (cost) effects.

(3) From Adoption to Diffusion

The third phase is the process of the 'aggregation' of individual adoption decisions. Rogers (2003) defines the innovation diffusion process as a group process that occurs within society, while the adoption process is defined as a mental process through which an individual passes from first hearing about an innovation to final adoption. In the stage, where individual adoption decisions are aggregated, there are a number of effects that lead to market uptakes (i.e. diffusion) and non-uptakes. Economists look at network effects, lock-ins and critical masses in the diffusion processes (e.g. Arthur, 1989; Bikhchandani et al., 1992; David and Olsen, 1992). Similarly, both the economics of (Banerjee, 1992; Bikchandani et al., 1992) and social psychology of herd behaviour (Turner, 1991) argue that social interactions and learning motivate people within homogenous groups (Bandura, 1986; Rogers, 2003). In order to help practitioners to market and deliver new energy services, the findings on customer values and their individual adoption decisions need to be extrapolated to the market-level diffusion patterns.

(4) From Beliefs/Norms to Diffusion

The fourth phase represents how consumers' beliefs and norms, and belief-based differences between consumer groups, shape the way in which an innovation is diffused at the aggregate market level, rather at the group level. At this final phase, differences and similarities between adopter-lifestyle groups will become important. This is because these adopter-group relationships are relatively unexplored, and yet such an investigation can provide information as to what kind of beliefs and norms help people adopt an innovation and what kind of factors can interfere the decision-making process. This contextual understanding of the front-end value will bridge the gap between providers' intended value of an innovation and consumers' perceived value of it, providing firms with competitiveness in the market and an economic advantage.

5. Concluding Remarks

Individual consumers' decisions on what innovations to consume and adopt are affected by more than dispassionate evaluations of intrinsic technical qualities.

Consumers make decisions to take up innovations for different reasons that can be socially influenced or personal. Today's consumers are becoming ever more unpredictable, eccentric and complex, and this makes the management of innovation increasingly challenging.

Understanding how innovations are taken up by consumer communities is therefore vital for innovation diffusion. Successful adoption and diffusion depends on how well consumer contexts are understood by innovation providers. As discussed above, there is a gap in our knowledge of the way consumers' contexts affect their innovation adoption decisions. The perspectives of cultures of consumption offer a broader contextual and emotive picture of consumers, which is not only demographic and personality traits, but also people's underlying values that form their opinions and govern their behaviour and behaviour itself. Such consumer practices and motivations (what consumers do and why they do what they do) need to be incorporated into our understanding of innovation adoption. By combining two disciplinary traditions – innovation and consumption studies – the existing understanding of the demand side in innovation adoption and diffusion will be broadened.

One of the most important decisions made during the innovation process is that of the consumer. Markets are created, profits produced and innovative firms survive and grow, only when individuals decide to buy or adopt innovations. Firms that wish to improve the innovation performance have to address the inputs to their innovation processes, such as market and technological knowledge, product development and R&D investments. But it is also critically important for them to understand the consumption and adoption of innovation and how adopters can influence these inputs into innovation. The identification of determinants of consumer adoption behaviours also allows firms to measure and forecast the economic effects of innovations, which then helps them to improve positioning of their innovations. Few of today's organisations can prosper without understanding the desires and actions of consumers of their innovative products and services.

References

- Ajzen, Icek (1991) 'The theory of planned behavior', *Organization Behavior and Human Decision Processes*, 50, 179-211.
- Ajzen, Icek and Martin Fishbein (1980) *Understanding Attitudes and Predicting Social Behaviour*, Eaglewood Cliffs, NJ., Prentice-Hall.
- Appadurai, Arjun (1986) *The Social Life of Things: Commodities in Cultural Perspective*, Cambridge, Cambridge University Press.
- Arthur, W. Brian (1989) 'Competing technologies, increasing returns and lock-in by historical events', *Economic Journal*, 99(194), 116-131.
- Baggozi, Richard P., Davis, Fred D. and Warshaw, Paul R. (1992) 'Developing and test of a theory of technological leaning and usage', *Human Relations*, 45(7), 660-686.
- Bamberg, Sebastian (2003) 'How does environmental concern specific influence environmentally related behaviours? A new answer to an old question', *Journal of Environmental Psychology*, 23, 21-32.
- Bandura, Albert (1986) *Social Foundations of Thoughts and Action: A Social Cognitive Theory*, Englewood Cliffs, NJ., Prentice-Hall.
- Banerjee, Abhijit V. (1992). 'A Simple Model of Herd Behavior', *Quarterly Journal of Economics* 107(3), 797-817.
- Berger, Peter L. and Luckmann, Thomas (1966) *The Social Construction of Reality: A Treatise on the Sociology of Knowledge*, New York, Doubleday.

- Bettman, J.R. (1979) *An Information Processing Theory of Consumer Choice*, Reading, Addison-Wesley.
- Bikhchandani, Sushil, Hirshleifer, David and Welch, Ivo (1992) 'A theory of fads, fashion, custom, and cultural change as information cascades', *Journal of Political Economy*, 100(5), 992-1026.
- Chaney, David (1996) *Lifestyles*, London, Routledge.
- Csikszentmihalyi, Mihaly and Rochberg-Halton, Eugene (1981) *The Meaning of Things: Domestic Symbols and the Self*, Cambridge, Cambridge University Press.
- Coleman, James S. (1990) *Foundations of social theory*, Cambridge, Harvard Univ. Press.
- David, Paul A. and Olsen, Trond E. (1992) 'Technology adoption, learning spillovers and the optimal duration of patent based monopolies', *International Journal of Industrial Organization*, 10, 517-544.
- Davis, Fred D. (1989) 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', *MIS Quarterly*, 13(3), 319-340.
- Davis, Fred D., Bagozzi, Richard P. and Warshaw, Paul R. (1989) 'User acceptance of computer technology: A comparison of two theoretical models', *Management Science*, 35, 982-1003.
- Dickerson, Mary Dee and Gentry, James W. (1983) 'Characteristics of adopters and non-adopters of home computers', *Journal of Consumer Research*, 10, 225-235.
- Dittmar, H. (1992) *The Social Psychology of Material Possessions: To Have is To Be*, Harvester Wheatsheaf, St Martin's Press.
- Featherstone, Mike (1991) *Consumer Culture and Postmodernism*, London, Sage.
- Fliegel, Frederick C. and Kivlin, Joseph E. (1966) 'Attributes of innovations as factors in diffusion', *American Journal of Sociology*, 72, 235-248.
- Gergen, Kenneth J. (1985) "The social constructionist movement in modern psychology" *American Psychologist*, 40(3), 266 – 275.
- Giddens, Anthony (1991) *Modernity and Self-identity*, Cambridge, Polity Press.
- Goldsmith, R. E. and Hofacker, C. F. (1991) 'Measuring consumer innovativeness', *Journal of Academy of Marketing Science*, 19(3), 209-222.
- Gutman, J. (1982) 'A means-end chain model based on consumer categorization processes', *Journal of Marketing*, 46(2), 60-72.
- Hawkins, Delbert I., Best, Roger J. and Coney, Kenneth A. (1998) *Consumer Behavior: Building Marketing Strategy*, Boston, McGraw-Hill.
- Hirschman, Elizabeth C. (1982) 'Symbolism and technology as sources for the generation of innovations', *Advances in Consumer Research*, vol.9, Vancouver, Association for Consumer Research, 537-541.
- Holt, Douglas B. (1997) 'Poststructuralist lifestyle analysis: conceptualizing the social patterning of consumption in postmodernity', *Journal of Consumer Research*, 23(4), 326-350.
- Im, Subin, Bayus, Barry L. and Mason, Charlotte H. (2003) 'An empirical study of innate consumer innovativeness, personal characteristics, and new product adoption behavior', *Journal of the Academy of Marketing Science*, 31(1), 61-73.
- Kahneman, Daniel (ed.) (2000) *Choices, Values and Frames*, Cambridge, Cambridge University Press.
- Kluckhohn, Clyde (1951) 'Values and value-orientations', T. Parsons and E. Shils (eds.) *Toward a General Theory of Action*, New York, Harper & Row, 388-433.
- Lash, Scott and Urry, John (1994) *Economies of Signs and Space*, London, Sage.
- Labay, Duncan G. and Kinnear, Thomas C. (1981) 'Exploring the consumer decision process in the adoption of solar energy systems', *Journal of Consumer Research*, 8, 271-278.
- Manning, Kenneth C., Bearden, Willam O. and Madden, Thomas J. (1995) 'Consumer innovativeness and the adoption process', *Journal of Consumer Psychology*, 4(4), 329-345.

- McCracken, G. (1986) 'Culture and consumption: a theoretical account of the structure and movement of the cultural meaning of consumer goods', *Journal of Consumer Research*, 13, 71-84.
- Midgley, David and Dowling, Grahame R. (1978) 'Innovativeness: the concept and its measurement', *Journal of Consumer Research*, 4(4), 229-242.
- Morison, Elting E. (2004[1966]) 'Gunfire at sea: a case study of innovation', Burgelman, R. A., Christensen, C. M. and Wheelwright, S. C. (eds.) *Strategic Management of Technology and Innovation*, 4th edition, Boston, McGraw-Hill, 431-440.
- Ostlund, Lyman E. (1974) 'Perceived innovation attributes as predictors of innovativeness', *Journal of Consumer Research*, 1, 23-29.
- Reckwitz, A. (2002) 'Toward a theory of social practices: A development in culturalist theorizing', *European Journal of Social Theory*, 5, 243-263.
- Rindova, Violina P. and Petkova, Antoaneta, P. (2007) 'When is a new thing a good thing? Technological change, product form design, and perceptions of value for product innovations', *Organization Science*, 18(2), 217-232.
- Rokeach, Milton J. (1973) *The Nature of Human Values*, New York, Free Press.
- Rogers, Everett M. (1976) 'New product adoption and diffusion', *Journal of Consumer Research*, 2(4), 290-301.
- Rogers, Everett M. (2003[1962]) *Diffusion of Innovations*, 5th edition, New York, The Free Press.
- Schatzki, Theodore (1996) *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*, Cambridge, Cambridge University Press.
- Shove, Elizabeth (2003) *Comfort, Cleanliness and Convenience: The Social Organization of Normality*, Oxford, Berg.
- Shove, Elizabeth and Pantzar, M. (2005) 'Consumers, producers and practices: Understanding the invention and reinvention of Nordic walking', *Journal of Consumer Culture*, 5, 43-64.
- Simon, Herbert A. (1982) *Models of Bounded Rationality*, Cambridge, MA., MIT Press.
- Slater, Don (1997) *Consumer Culture and Modernity*, Cambridge, Polity Press.
- Steenkamp, Jan Benedict E. M., ter Hofstede, Frenkel and Wedel. Michel (1999), 'A cross-national investigation into the individual and national cultural antecedents of consumer innovativeness', *Journal of Marketing*, 63(2), 55-69.
- Tellis, Gerard J., Yin, Eden and Bell, Simon, 'Global consumer innovativeness: inter-country differences and individual commonalities' (unpublished paper; personal communication).
- Tidd, Joe, Bessant, John and Pavitt, Keith (2001) *Managing Innovation: Integrating Technological, Market and Organizational Change*, 2nd edition, Chichester, John Wiley & Sons.
- Turner, John C. (1991). *Social Influence*, Pacific Grove, Brooks & Cole.
- von Hippel, Eric (2005) *Democratizing Innovation*, Cambridge, MA., MIT Press.
- Warde, Alan (2005) 'Consumption and theories of practice', *Journal of Consumer Culture*, 5(2), 131-153.
- Weber, Christoph and Perrels, Adriaan (2000) 'Modelling lifestyle effects on energy demand and related emissions', *Energy Policy*, 28(8), 549-566.
- Weber, Max (1972) *Wirtschaft und Gesellschaft; Grundriss der Verstehenden Soziologie*, Tübingen, Mohr.
- Wells, William D. and Tigert, Douglas J. (1971) 'Activities, Interests and opinions', *Journal of Advertising Research*, 11(4), 27-35.