

Influences on purchase intentions of organic food consumers in an emerging economy

Neeraj Dangi, Sapna A. Narula and Sandeep Kumar Gupta

Abstract

Purpose – This paper aims to investigate the determinants of organic food buying behaviour in an emerging economy like India, where organic food yet has low market share in spite of its potential. Using the theory of planned behaviour (TPB) as the underlying basis, it attempts to explain the effect of attitude, subjective norms and the perceived behaviour control (PBC) on buying intention towards organic food among respondents in Delhi-National capital region, India. Additionally, it attempts to discriminate functional and constructive attitudes.

Design/methodology/approach – A quantitative questionnaire survey approach was used on 306 respondents and multiple linear regression was used to validate the research model.

Findings – Attitudes and PBC have a significant positive impact on the intention to purchase organic food. This paper found subjective norms to be weak and barely significant to intention. The results conclude that health motives, past purchase behaviour, knowledge, affordability and trust in organic certification label are the main facilitators in organic food purchase. Primarily, the respondents see buying organic food regularly as being of value and enjoyable to them. A more favourable appearance vs conventional food was negatively related to behavioural intention.

Originality/value – This research could aid all stakeholders in the organic food sector, particularly emerging economies like India where the organic market is still nascent. It could be an essential driver to improve customer involvement and thus aid them in the decision-making process to choose organic food over conventional food. It also attempts to establish the usability of TPB in assessing functional attitudes based on constructive attitudes for organic food purchase.

Keywords Organic food, Consumer buying behaviour, Theory of planned behaviour, Attitude, Perceived behavior control, Subjective norms, Indian consumers

Paper type Research paper

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1. Introduction

Consumers' demand for safe and environmentally friendly products is increasing throughout the world. Organizations are responding by becoming more sustainable to remain relevant and competitive (Rao, 2007; Chariri *et al.*, 2019; Laskar, 2018; Singh and El-Kassar, 2019; Singh, 2019) by changing their governance, operations and products (Singh *et al.*, 2019; Bhaumik *et al.*, 2019; Kumar *et al.*, 2020; Singh, 2018a, 2018b). Sometimes organizations, especially in emerging economies, may adopt just for the sake of corporate social responsibility compliance (Gaur *et al.*, 2019), whereas others desire to gain a competitive edge over competitors through differentiation. Nevertheless, consumer concern for ecological, nutritional, health and other related issues have led to consistent growth of organic food and drinks across the world (Schlatter *et al.*, 2020; ASSOCHAM & EY, 2018), which had reached US\$114bn in 2018 (Schlatter *et al.*, 2020). The three most significant organic food and drinks markets in the world (as of 2017) are USA (US\$47.9bn), Germany (US\$12.8bn) and France (US\$10.7bn), respectively, with Switzerland, Denmark (US

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\$368 each) and Sweden (US\$272) having the highest per capita consumption of organic food per annum (Schlatter *et al.*, 2020). The organic food market in India, though nascent, is seeing sizeable growth and was estimated at US\$223.2m (2017) (Schlatter *et al.*, 2020).

The demand for organic food in India is limited to big towns (Oswald, 2013; Nandi *et al.*, 2017) primarily metro cities (Sally, 2013), where it grew by 95 per cent since 2012 (ASSOCHAM & EY, 2018). The growth has been highest in Delhi and Mumbai (ASSOCHAM, 2013) with Delhi having the highest household income among metros in India (Shukla, 2010, 2018). However, further analysis shows that in spite of 62 per cent of households in metros prefer organic over conventional food, yet their weekly organic food purchase remains low (ASSOCHAM, 2013). So, in spite of Delhi-National capital region (NCR) residents having one of the highest purchasing powers in India and increased awareness, organic food is far from becoming a mass product. The intention is not always translated into behaviour in spite of higher income suggests supply and demand constraints. Thus, in spite of increased awareness, the share of organic food in India has remained low; the per capita consumption of organic food in India is only US\$0.21 (2017) compared to US\$12.8 globally (2018) (Schlatter *et al.*, 2020).

Researchers globally have considered health and environmental motives, demographic characteristics and psychographic factors like attitudes in their study (Baker *et al.*, 2004; Zhou *et al.*, 2013). However, most studies have been done on developed economies. Buying decisions depend on social, economic, cultural and other related factors (Haryanto *et al.*, 2019) like product origin (Vijaranakorn and Shannon, 2017; Wei, 2008) and often involves trade-off or loss aversion strategies by the consumer (Burhanudin and Ferguson, 2018), that may vary considerably nationally and regionally limiting the generalisation of previous conclusions from other regions (Gong *et al.*, 2013; Parida and Sahney, 2017). Thus, an analysis of Indian market may offer a different insight about consumer buying intention as the inference drawn from other, especially developed nations may not be relevant and valid (Zhou *et al.*, 2013).

There have been very limited studies on organic food consumption in India which have been conducted in cities such as Chennai, Bangalore (Basha and Lal, 2019), Kolkata (Prakash *et al.*, 2018) and New Delhi (Pandey and Khare, 2015; Sondhi, 2014; Misra and Singh, 2016). However, often they have limited it to specific demographic groups like young consumers (Yadav and Pathak, 2016; Prakash *et al.*, 2018). Additionally, previous studies in India have either not factored in the influence of subjective influence (friends, family and opinion leaders) (Misra and Singh, 2016), clustering Delhi (metro) with non-metro cities together (with different demand and supply conditions) (Singh and Verma, 2017; Pandey and Khare, 2015) or sampled from non-organic food consumers (Sondhi, 2014). Further, previous organic food consumption studies in India have not screened potential respondents based on-time duration of previous organic food purchase, whereas we have only considered existing organic food consumers who have purchased organic food product(s) in the past one month. This we believe could help in reducing the intention-behaviour gap during organic food purchase as mentioned earlier and is sometimes argued (Hamlin, 2016; Singh and Verma, 2017).

For our study, we have used the theory of planned behaviour (TPB) proposed by Icek Ajzen. It evolved from the theory of reasoned action and of late has become the dominant social psychological theory for predicting human behaviour. Specifically, the TPB model offers a better examination of the underlying beliefs that highlight the psychographic factors (attitude), social norms factors (subjective norms) and other facilitators and barriers (perceived behavioural control [PBC]) of behavioural intention compared to other theories (Ajzen, 2015a, 2015b). Further, socio-demographic factors act as background factors to test its influence on its intention (Ajzen, 2015b). However, the study limits itself to study the underlying beliefs and not background factors. The utility of this model in organic food consumption has been supported previously (Tarkiainen and Sundqvist, 2005; Anssi and

Sanna, 2005; [Chen, 2007](#); [Thøgersen, 2007](#); [Zhou et al., 2013](#); [Hoppe et al., 2013](#)). Few studies in India have applied TPB ([Singh and Verma, 2017](#)), often modifying it ([Yadav and Pathak, 2016](#)) sometimes heavily, by excluding one of the TPB's sub-construct ([Basha and Lal, 2019](#)). Therefore, it merits further investigation in a metro city like Delhi-NCR to identify the attitude, the social influence and the potential enablers and barriers of organic food behavioural intention from a diverse demographic sample. The study contributes to an emerging paradigm in the organic food decision-making process by Indian consumers as they consider it as valuable due to health concern, whereas its knowledge augments their trust. It could assist stakeholders in the organic value chain to calibrate their policies/programmes for organic food promotion. Additionally, it can help organic food retailers to optimize their product positioning *vis-à-vis* consumer expectations of their target segments within the Indian organic market space. Further, it can also be useful for national and international organic food standards.

2. Literature review

Previous literature identifies various factors (or product attributes) as barriers and facilitators for organic food consumption in emerging economies. These factors can be further classified into intrinsic or extrinsic attributes. Intrinsic attributes or cues such as appearance, smell, colour, taste and texture ([Symmank, 2018](#); [Ghosh et al., 2016](#); [Hamlin, 2016](#)) are part of the product ([Symmank, 2018](#); [Hamlin, 2016](#)). External attributes such as brand, certification, price and packaging though related are not part of it physically ([Symmank, 2018](#); [Hamlin, 2016](#)).

Food taste (sensory appeal) is often cited as one of the motive of organic food purchase in various studies like in India ([Radhika et al., 2012](#); [Nandi et al., 2017](#)) and Mexico ([Escobar-Lopez et al., 2017](#)). However, this intrinsic attribute can only be evaluated post-purchase in most cases. As per [Husic-Mehmedovic et al. \(2017\)](#), intrinsic cues impact organic food purchase intention more than extrinsic cues. However, most factors or attributes impacting organic food purchase seen are extrinsic like price ([Mohamed et al., 2012](#)), organic certification ([Escobar-Lopez et al., 2017](#)) and others.

Price of organic food is important during purchase because it relates to affordability ([Singh and Verma, 2017](#); [Maruyama and Trung, 2007](#)). A qualitative study in China revealed that consumers tradeoff between economic vs health benefits during food consumption ([Sirieix et al., 2011](#)) where health was the main motive and price was the biggest barrier. Price sensitivity may not disappear with affluence as [Maruyama and Trung \(2007\)](#) found among Vietnamese consumers. Still, it may not always be a barrier ([Radhika et al., 2012](#); [Escobar-Lopez et al., 2017](#)). [Kavaliauske and Ubartaute \(2014\)](#) in a Lithuanian study found that price was not a limiting factor because organic food was perceived as a high-value product satisfying their desire to consume healthy food.

Health and environmental concerns are topmost reasons for purchasing organic food ([Ibitoye et al., 2014](#); [Escobar-Lopez et al., 2017](#)) for consumers desire to avoid or minimize chemical residue ([Nandi et al., 2017](#)). Food safety is often the prime motivator for switching to organic food as [Tleis et al. \(2017\)](#) found in Lebanon. Organic food certification labels can assist in food quality and safety ([Prentice et al., 2019](#)).

[Chakrabarti \(2010\)](#) found retail store reputation ([Nandi et al., 2017](#)), organic certification knowledge, opinion leaders (influential individuals in their communities of a given area/market) and word of mouth as key factors in a survey of experts in India. Similarly, lack of knowledge and information asymmetry (situation favouring seller as it has more information than buyer) was reported as the most important reason for Polish consumers for not purchasing organic food ([Zakowska-Biemans, 2011](#)). As a result, consumers did not use organic certification labels and instead relied on shop assistants during shopping ([Zakowska-Biemans, 2011](#)). Information asymmetry leading to trust issues for organic foods

was also observed in Egyptian (Mohamed *et al.*, 2012), Thai (Pomsanam *et al.*, 2014) and Indian studies (Radhika *et al.*, 2012; Sakthirama and Venkatram, 2013).

Adequate knowledge of organic food including organic certification can increase awareness and elevate trust among consumers (Pomsanam *et al.*, 2014) minimizing chances of greenwashing. Promotional campaigns by different stakeholders including marketers can overcome these barriers (Manohar *et al.*, 2012). This will also reduce price sensitivity among consumers.

Availability may impact the purchase of organic food as it influences consumer convenience (Mohamed *et al.*, 2012; Singh and Verma, 2017; Radhika *et al.*, 2012). Because of limited availability, housewives in Vadodara, India could not purchase in spite of having good knowledge about organic food (Dholakia and Shukul, 2012).

Consumer attitudes can be classified into two categories; functional and constructive. Functional attitudes are structured and stable in the consumer's mind for a long time. Whereas, constructive attitudes are temporal and transient and are constructed in situ (Hamlin, 2016). Thus, functional attitudes form the broader base on which constructive attitudes are formed at a given time. However, a consumer can use both functional and constructive attitude at the same time (Argyriou and Melewar, 2011).

Multidimensional attitude profiles that relate to different organic food types as abstract concepts can be measured through TPB survey (Hamlin, 2016). Because this study tests the buying intention of organic food in general rather than the actual purchase of specific organic food items, the TBP survey can be used. As per Hamlin (2015), functional attitudes are perhaps exploratory in nature, as they are stated attitude profiles rather than revealed attitude profile output (Hamlin, 2016). Generic functional attitudes of abstract organic foods complement product and situation-specific constructive attitudes during shopping by substantially contributing to its construction (Hamlin, 2016). External and internal cues retrieve and link functional attitudes to consumer buying behaviour at the retail point with a consumer using cue-based heuristics rather than a cognitive exercise during the purchase (Scheibehenne *et al.*, 2007; Hamlin, 2010; Schulte-Mecklenbeck *et al.*, 2013; Hamlin, 2015, 2016) However, Steptoe *et al.*'s (1995) concludes that food products can be evaluated through abstract functional attitudes through cognition.

Theory-based research facilitates a better understanding of behavioural factors like attitude for specific behaviour. Different models like TPB (Jain *et al.*, 2017), multi-attribute and subjective expected utility (SEU) have been used in consumer research. The multi-attribute model posits that consumers evaluate product attributes for decision. On the other hand, SEU theory proposes that decision-making under risk (uncertainty) allowing subjective evaluation of both the product attributes and its associated probabilities. However, both are structured approaches and creating possible product attributes combination creates heavy cognition load, particularly when product attributes increases. Also, they do not consider other inferences like social influence and lack of complete volitional control (the degree to which a person can exercise control over the behaviour) as in TPB (Ajzen, 2015b). TPB directly assesses its theoretical sub-constructs to infer underlying decision-making rather than revealed preferences as done in multi-attribute and SEU models (Ajzen, 2015b, 2015a). It emphasizes the intricate correlation between various sub-constructs (attitudes, norms, intention and behaviour).

Food purchasing is generally considered a low-involvement process (buying without much thinking) (Ghosh *et al.*, 2019). However, the purchase of organic food differs from a conventional one. Its purchase is mostly due to product attributes associated with health, environmental protection and animal welfare instead of only stimuli such as a retail store atmosphere (Lee and Yun, 2015). Many authors have argued for the same and suggest that it a high involvement one (Ghosh *et al.*, 2019; Tarkiainen and Sundqvist, 2005; Eide, 2013).

Argyriou and Melewar (2011) classify the TPB as the deliberative and evaluative type (requires careful examination) where attitude formation is functional and cognitive. However, TPB does not propose that people are rational (Ajzen, 2015b, 2011, 2012; Ajzen and Fishbein, 2000). It does not assume that behavioural, normative and control beliefs are objective or devoid of unconscious biases, inaccuracies, and emotions and thus may fail to concur with reality in many ways (Ajzen, 2015a). They may be based on selective information as well (Ajzen, 2015a). Still, these beliefs lead to their attitudes towards the behaviour, their subjective norms, their perceptions of behavioural control (Ajzen, 2011, 2015a), intentions and behaviours (Geraerts *et al.*, 2008). It is in this sense; the behaviour is considered being reasoned or planned (Ajzen, 2011, 2015a). It does not use a cognitive approach only and, therefore, is not planned as normally assumed.

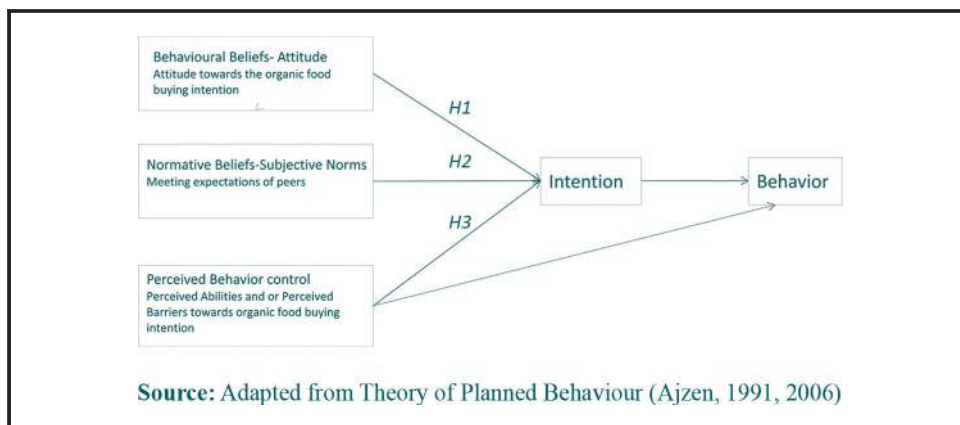
Additionally, it distinguishes between motivating people who are not inclined versus enabling people who already possess positive intentions to act on those intentions. The respondents in this study are existing organic consumers who possess positive inclinations to purchase organic food. As per Ajzen (2011) and Ajzen and Fishbein (2000) TPB can be used for common everyday behaviour involving low involvement products without much cognition. Such routinised behaviour is stored in memory and evoked as when required and performed without much conscious consideration (Ajzen, 2015b, 2011) with little deliberation and are implicit (Ajzen and Dasgupta, 2015). Thus, TPB can be applied for food purchase studies.

3. Theoretical framework and hypotheses

The theoretical framework (Figure 1) uses an extended model of TPB. Intention echoes potential behaviour. Three hypotheses are proposed to ascertain the presence of a positive relationship between independent sub-constructs (of attitude, subjective norm and PBC) and the dependent variable (intention).

Attitude determines the general evaluation towards an object (Kaur and Hundal, 2017; Oliver, 2010) that could be a tangible product or an intangible service or abstract idea (Kotler *et al.*, 2014). Attitude is composed of three components-cognitive (beliefs about the object), affective (feelings or emotions towards the object) (Rahmanian Koshkaki, 2014) and the behaviour (anticipated future behaviour towards the object). Therefore, organic food consumers are aware of the harmful effects of conventional food on their health and the environment (cognition). Accordingly, they agree and support the organic food movement (affect). Thus, they intend to consume organic food products (behaviour) (Hamlin, 2016).

Figure 1 Theoretical framework based on the theory of planned behaviour



Attitude involves the degree of favourable or unfavourable appraisal of the target behaviour by the person (Ajzen, 1991). Generally, a more positive attitude towards the behaviour and barriers (like a higher price) in PBC makes the intention to execute the said behaviour stronger. Previous research has shown it as a vital predictor of intention (Yazdanpanah and Forouzani, 2015; Maichum *et al.*, 2017). The expectancy-value model postulates that the attitude (towards behaviour) is established by the accessible behavioural beliefs collectively that connect the behaviour to several outcomes and other characteristics. Thus, attitude can be regarded as vital to predict and describe human behaviour (Ajzen, 1991). Accordingly, the following hypothesis needs to be corroborated:

H1. There is a significant and positive relationship between attitude and intention to buy organic food products.

Subjective norm is a social factor wherein an individual is subjected to perceived societal pressure from family, relatives, friends, colleagues (Paul *et al.*, 2016; Park, 2000) to comply with expectations prevailing in their social environment (Ham *et al.*, 2015). This may determine an individual's intention to either perform or refrain from behaviour. If buying organic food is considered socially desirable behaviour in society, then an individual is more likely to buy organic food for self and or their family. Many previous studies have shown its importance in influencing a person's decision-making (Ha *et al.*, 2012; Dean *et al.*, 2012; Singh and Verma, 2017). Thus, for this sub-construct, the following hypothesis is proposed:

H2. There is a significant and positive relationship between subjective norm and intention to buy organic food products.

PBC is the degree to which an individual executes the behaviour. It consists of two characteristics: the quantum of control an individual has over behaviour and the confidence an individual feels they have about being able to carry out the behaviour or not (Zhou *et al.*, 2013; Maichum *et al.*, 2016).

This is based on an individual's belief set about the influence of both internal (like self-efficacy) and external (like availability and convenience) factors to facilitate the execution of the behaviour (Olsen, 2004). It involves previous experiences and anticipated obstacles (Ajzen, 1991) that may be based on both internal and external perceived control or difficulty factors (Vermeir and Verbeke, 2008). The more the control an individual thinks they possess for buying organic food, the more likely an individual would pursue it. Previous research in different regions such as India (Yadav and Pathak, 2016), Thailand (Maichum *et al.*, 2016; Maichum *et al.*, 2017) and Finland (Tarkiainen and Sundqvist, 2005) have shown that PBC is significantly associated with intention. The following hypothesis is proposed for this sub-construct:

H3. There is a significant and positive relationship between perceived behaviour control and intention to buy organic food products.

4. Methodology

The data collection for this study was primary via a questionnaire survey (El-Kassar and Singh, 2019). The questionnaires were administered in hard copy. The respondents were above 18 years old, who were residents of Delhi-NCR. The respondents were organic food consumers who had consciously purchased organic food in last month. The sampling technique was non-probability purposive sampling. The survey methodology was an intercept of consumers at the exit (Singh, 2018a, 2018b), of the organic food retail points within Delhi-NCR. The study followed a sampling strategy to avoid bias by the type of respondents with sampling from different locations at different times (Liang, 2016). For this research, 550 questionnaires were distributed out of which a total of 353 respondents filled in their responses during final data collection. This gave a robust response rate of 55.6 per

cent (Nulty, 2008). Post scrutiny, 47 questionnaires were discarded because of incorrect data entry such as multiple entries, no response to item(s), partially filled questionnaires and/or invalid responses. The final usable sample size was 306 organic consumers (43 per cent female and 52 per cent married) were used for data analysis.

4.1 Measures

The data collection was through a structured data collection instrument in the form of a questionnaire, based on guidelines given in Ajzen (2013) and Francis *et al.* (2004) which itself follows the TPB (Ajzen, 1991). Though previous studies in TPB were referred to design the questionnaire, still many items were prepared and others adopted for this study.

To be relevant to the target population, factors were selected and operationalized based on the literature review and interviews. An interview session with organic food consumers was initially conducted before questionnaire construction to elicit salient beliefs as recommended (Ajzen, 2006) and supported by Dillman *et al.* (2009), Francis *et al.* (2004). They were asked about the advantages and disadvantages of buying organic food regularly for consumption. Further, they were asked to report the individuals or groups that would approve or disapprove of buying organic food. Finally, they reported the various factors or circumstances that make it easy or difficult for them to buy organic food. The factors elicited were verified with previous literature (Ajzen, 2002; Yadav and Pathak, 2016; Yazdanpanah and Forouzani, 2015; Francis *et al.*, 2004; Ghosh *et al.*, 2016, 2019; Steptoe *et al.*, 1995; Tarkiainen and Sundqvist, 2005) to evaluate their inclusion. All the factors elicited were converted into direct and indirect items during scale construction.

In the case of subjective norms, groups or individuals referred in interviews were friends, family, celebrity, children and parents. However, many respondents in the pilot study found such items similar. So, to reduce the items and questionnaire length, celebrity was reworded as important people include non-celebrity people as well. “Children” and “parents” variables were removed as the “family” variable represents them. This also took care of households which had no children. So, in the end, four items were considered for subjective norms (two direct and two indirect).

The questions or items were designed as per recommendations of Ajzen (1991) that follow the target, action, context and time (TACT) principle (Ajzen, 2006; Francis *et al.*, 2004). As per Francis *et al.* (2004), “target behaviour should be defined carefully in terms of its Target, Action, Context and Time (TACT)”. For example, consider the behaviour “buying organic food regularly for consumption”. Here the target is the organic food consumer, the action is buying regularly, the context is for the consumption and the time is (implicitly referred) in the near future.

The attitude, subjective and PBC, intention sub-constructs were measured with 14, 4, 12 and 3 items respectively. Past behaviour was measured with two items. Thus, 35 items were used in the questionnaire. Ajzen (1991) in the TPB has stated that past behaviour can be a predictor of future behaviour. Therefore, the past behaviour items were considered under PBC variable, assuming that past behaviour would predict the intention.

The attitude, subjective norm and PBC sub-constructs had items for both direct and indirect measures of their respective variables (Ajzen, 1991). The direct items used a seven-point unipolar semantic differential scale and the indirect items used a seven-point unipolar or bipolar differential scale. Each indirect variable was computed through two indirect items (Ajzen, 2013; Francis *et al.*, 2004). For example, “attitude towards health” variable in attitude sub-construct was computed by multiplying one item on “attitude towards health” (behavioural belief) and “attitude towards health” (outcome evaluation) that were measured on unipolar and bipolar semantic differential scale respectively (Appendix). Similarly, the “knowledge” variable in PBC sub-construct was computed by multiplying one item on knowledge (control belief) and knowledge (power of control belief). The “friends” variable in

subjective norms sub-construct was computed by multiplying one item of “friends” (normative belief) with “friends” (motivation to comply). The bipolar scaling allowed positive and negative scores to be easily differentiated. The direct measures were labelled with bipolar adjectives. The total direct predictor variables considered for analysis were 13, with 5 in attitude, 2 in subjective norms and 6 in PBC. Similarly, the total indirect predictor variables, computed through two related indirect items, considered for analysis were nine, with four in attitude, one in subjective norms and four in PBC sub-constructs, respectively. Thus, the total predictor variables, direct and indirect, that were analysed using regression analysis were 22. The study used the generalized intention method as is commonly used for self-reporting behaviour (Francis *et al.*, 2004). The dependent variable intention was computed by standardizing the values, through z-scores, of three direct intention items followed by their mean. This allowed the respective weight of individual items in the final intention dependent variable.

4.2 Validity

The survey instrument in the pilot study was administered to five sample organic food shoppers at an organic food retail point for face validity. This was to assess the clarity and readability of items. For content validity, the questionnaire was referred to six experts to get feedback on individual items for its clarity, accuracy and relevancy. One item “buying all from the organic farmer” (direct attitude variable) was deleted during content validity phase.

A zero-order correlation was conducted among the direct and indirect variables of respective constructs to confirm the validity of the indirect measures. This evaluates the strength of construction and how well the indirect measures cover the breath of the measured constructs. Except subjective norms, each set of indirect belief was adequately correlated with their corresponding direct measures: direct attitude with indirect attitude measures ($r = 0.43$; $p < 0.01$); direct PBC with indirect PBC measures ($r = 0.48$; $p < 0.01$); and direct subjective norms with indirect subjective norms measures ($r = 0.21$; $p < 0.001$).

Additionally, Table I shows the inter-correlations among various constructs in the research model. Except for PBC-subjective norms and attitude-subjective norms, all correlations were significant. The correlation coefficients in Table I further documents that mainly PBC and attitude are the main determinants of organic food purchase intention.

4.3 Reliability

Internal consistency reliability was calculated for the complete survey data (N = 306) through Cronbach alpha, McDonald omega (ω) and greatest lower bound (GLB) for improved accuracy. Cronbach Alpha is commonly used for checking the reliability of items (Sijtsma, 2009a, 2009b). However, it often underestimates the reliability values and sometimes gives negative or bizarre estimates (Cronbach and Hartmann, 1954; Greene and Carmines, 1979; Hair *et al.*, 2017). Cronbach alpha is based on a tau-equivalent model where all items are expected to measure the underlying variable on the same scale, and the items are also expected to equally associate strongly to the underlying variable is often

Table I Inter-correlations among model sub-constructs

<i>Sub-constructs</i>	<i>Attitude</i>	<i>SN</i>	<i>PBC</i>	<i>Intention</i>
Attitude	1			
SN	-0.029	1		
PBC	0.604*	0.054	1	
Intention	0.346*	0.163*	0.556*	1

Note: *Correlation is significant at the 0.01 level (two-tailed)

violated in real data scenarios making it unreliable parameter for reliability estimation (Peters, 2014; Sijtsma, 2009a; Sijtsma, 2009b).

Therefore, the GLB (Sijtsma, 2009a) and omega (Revelle and Zinbarg, 2009) have been suggested to avoid these deficiencies prevalent in Cronbach Alpha. Because asymmetrical data conditions are commonly observed (Norton *et al.*, 2013; Ho and Yu, 2014), ω is suggested for low skewed data (Revelle and Zinbarg, 2009) and GLB for moderate to high skewed data (Trizano-Hermosilla and Alvarado, 2016). As some variables have low to moderate asymmetrical data, both omega and GLB along with alpha are used to check for scale reliability (Table II). Additionally, because McDonald ω is a better measure for composite reliability, it would be more prudent to consider it instead of Cronbach α . As all the scores of McDonald ω are above 0.6, it can be conferred that the measurement scale meets composite reliability criteria. Further on, it supports the convergent validity of all the four sub-constructs of the research model based on composite reliability as well (Malik and Singhal, 2017). Two indirect items related to variable “time taken to buy organic food vs. non-organic food” were removed, as it had a very low inter-rest correlation in PBC sub-construct, to improve reliability. The final survey instrument had 34 items of the original 38 items for data collection.

The generally accepted Cronbach alpha score for any scale is 0.7 (Hair *et al.*, 2006; Nunnally, 1978) though alpha coefficient up to 0.6 (Hair *et al.*, 2006) and even below 0.6 (Aron and Aron, 1999) have also been considered. All constructs in omega and GLB and most in Cronbach alpha follow this. Except for Cronbach alpha value of 0.578 of subjective norms, all other reliability measures are in the acceptable range. The low Cronbach alpha in subjective norms could be due to the presence of only four items because Alpha is sensitive to the number of items.

Because omega and GLB scores are considered more accurate for reliability estimates (as discussed above) in real-world data conditions over Cronbach alpha scores, we assume the internal reliability of the scales as adequate (Table III).

5. Results

The TPB postulates three conceptually independent determinants (sub-constructs) of intention. Each sub-construct was individually analysed with multiple linear regression to evaluate the strength of the proposed relationship with intention. Accordingly, three hypotheses ($H1-H3$) related to three sub-constructs (namely, attitude ($H1$), subjective norm ($H2$) and PBC ($H3$)) were individually tested using multiple linear regression prediction models with organic food purchase intention as the dependent variable. It also identified the best set of predictor variables in each sub-constructs. The summary of the regression results is presented in Table IV. As given in Table IV, the regression results established that all hypotheses, $H1-H3$, were found to be significant in the TBP prediction model. The relationship between attitude ($H1$) ($R^2 = 0.391$, adjusted $R^2 = 0.372$, $p < 0.001$) and PBC ($H3$) ($R^2 = 0.459$, adjusted $R^2 = 0.441$, $p < 0.001$) on organic food purchase intention were found to be having a stronger variance positively. On the other hand, the subjective norm ($H2$) ($R^2 = 0.125$, adjusted $R^2 = 0.116$, $p < 0.001$) was found to be barely significant with its low values. As can

Table II Reliability of scales

Construct	Cronbach α	McDonald's ω	Greatest lower bound (GLB)
Attitude	0.821	0.837	0.923
Subjective Norms	0.578	0.651	0.687
Perceived behaviour control	0.709	0.754	0.818
Intention	0.626	0.632	0.646

Table III Socio-demographic data of respondents

<i>Socio-demographic data of respondents (N = 306)</i>		<i>Frequency (%)</i>
<i>Gender</i>		
Male		174 (56.9)
Female		132 (43.1)
<i>Marital status</i>		
Married		158 (52)
Unmarried		146 (48)
<i>Age group (in years)</i>		
18-25		126 (41.2)
26-35		72 (23.5)
36-45		68 (22.2)
46-55		28 (9.2)
56-65		10 (3.3)
Above 65		2 (0.7)
<i>Highest education</i>		
Pre-high-school		14 (5.0)
High school		28 (9.89)
Diploma		12 (4)
Graduate		138 (43.13)
Postgraduate		92 (30.06)
PhD and above		22 (7.18)
<i>Size of household (No. of occupants)</i>		
1/2		16 (5.2)
3		62 (20.4)
4		100 (32.9)
5		84 (27.6)
6		26 (8.6)
≥7		16 (5.4)
<i>No. of children in the household</i>		
0		178 (58.6)
1		68 (22.4)
2		54 (17.8)
3		4 (1.3)

Table IV Summary of regression results

<i>Path</i>	<i>p-value</i>	<i>Hypotheses supported</i>
<i>H1: Attitude > Intention to buy organic food products</i>	<0.001	Yes
<i>H2: Subjective Norm > Intention to buy organic food products</i>	<0.001	Yes
<i>H3: Perceived behavioural control > Intention to buy organic food products</i>	<0.001	Yes
Notes: Significance at: $p < 0.001$; $R^2 = 0.61.2$, adjusted $R^2 = 58.4$; dependent variable: organic food buying intention		

be observed, attitude and PBC contributed significantly to the organic food buying behavioural intention. The results support that organic food consumers' purchase intention can be predicted with the TPB model, corroborating previous studies (Scalco *et al.*, 2017; Basha and Lal, 2019). The expanded TPB model can possibly explain 61.2 per cent (or 58.4 per cent for adjusted R^2) of the variance in the purchase intention of organic food.

The results reported that only 13 predictor variables (factors) out of 22 variables (factors) initially identified were applicable to organic consumers in the Delhi-NCR area. In attitude

sub-construct, valuable ($\beta = 0.381, p < 0.001$), health ($\beta = 0.184, p < 0.01$) enjoyable ($\beta = 0.122, p < 0.05$) and appearance ($\beta = -0.152, p < 0.01$) (all direct variables) significantly predicted the consumer buying intention. In subjective norms sub-construct, important people (who may influence their intention to purchase organic food) ($\beta = 0.175, p < 0.01$) and family ($\beta = 0.292, p < 0.001$) were found statistically significant.

In PBC sub-construct, knowledge ($\beta = 0.292, p < 0.001$) affordability ($\beta = 0.171, p < 0.001$), availability ($\beta = 0.125, p < 0.01$), past behaviour purchase-frequency ($\beta = 0.229, p < 0.001$), past behaviour purchase behaviour-pleasant ($\beta = 0.157, p < 0.01$), trust on organic food label ($\beta = 0.122, p < 0.01$), control of purchase ($\beta = 0.114, p < 0.05$) and perceived cost ($\beta = -0.099, p < 0.05$) as single independent variables, were found statistically significant predictors which can support or impede consumer intention to purchase organic food.

6. Discussion

The primary objective of this research was to explore the role of an expanded theoretical framework of the TPB in predicting the purchase intention of organic food products in Delhi-NCR, India. Attitude towards organic food and the PBC were found positively influencing the consumer's intention to purchase organic food, whereas subjective norm had a weak effect.

The findings suggest that Indian consumers cope relatively well with disabling factors because PBC was the most significant determinant of organic food purchase intention among all the three sub-constructs (Yadav and Pathak, 2016; Zagata, 2012). This corroborates conclusions of previous studies (Zhou *et al.*, 2013; Zhu *et al.*, 2013; Nuttavuthisit and Thøgersen, 2017). However, others like Yazdanpanah and Forouzani (2015) found PBC not impacting intention.

Our study found that those with positive attitudes show greater affinity or intention to buy organic food. This is compatible with previous studies in different regions (Shu-Yen Hsu *et al.*, 2016; Liang, 2016; Kirijini and Thivahary, 2017; Barber *et al.*, 2012; Chen, 2007). Conversely, Nuttavuthisit and Thøgersen (2017) found that attitude is negatively related to intention. But, the positive attitude was primarily due to health reasons (Ibitoye *et al.*, 2014; Escobar-Lopez *et al.*, 2017) and not an environmental concern. This was further affirmed because they consider buying organic food as a "valuable" choice perhaps due to perceived nutritional superiority over conventional food and also enjoyed its purchase. This perhaps shows that Indian organic consumers are less altruistic in behaviour compared to their counterparts in developed economies. However, consumers did not believe that organic food is free of harmful chemicals, although it can be linked to consumer's health. This possibly indicates a lack of complete knowledge or trust deficit among consumers.

Knowledge about organic food and its process increases trust and is likely to reduce the uncertainty of purchase. Knowledge in this study emerged as an important enabler towards behavioural intention corroborating previous studies in emerging (Mohamed *et al.*, 2012; Pomsanam *et al.*, 2014; Zakowska-Biemans, 2011; Chakrabarti, 2010) as well as developed economies (Scorzon *et al.*, 2014; Valor *et al.*, 2014). This indicates its importance irrespective of the maturity of organic food markets as its absence can be a major barrier to organic food sales due to trust deficit.

Typically, consumers identify organic produce through certification and labelling which communicates what it stands for as well as what it lacks like "free of chemical fertilizers and pesticides" and "no chemical or artificial additives added" (Escobar-Lopez *et al.*, 2017; Pomsanam *et al.*, 2014). Apparently, there appears to be more stress on the absence of using and adding harmful synthetic chemicals (in its production) that may offer relative health benefits, as the certification program is based on prohibition. This creates information asymmetry for consumers. Also, all labels are not created equal. Misleading first-party

(retailer/producer promoted) labels like “natural” tend to confuse and compete with genuine independent third-party organic certification labels like “India Organic” or “USDA organic”. This often leads to greenwashing (fraudulent claims) by unscrupulous players in the organic market (Thøgersen *et al.*, 2010; Nuttavuthisit and Thøgersen, 2017; Zakowska-Biemans, 2011; Pomsanam *et al.*, 2014).

Thus, the lack of adequate consumer knowledge will render labelling and certification ineffective in decision making during shopping. Accordingly, consumers in Delhi-NCR indicated trust in organic food certification and label important like previous studies (Lin *et al.*, 2009; Manuchehr, 2016; Götze *et al.*, 2016; Selvarajah and Geretharan, 2017; Vehapi and Dolićanin, 2016; Liang, 2016). Increasing trust in organic food labels could reduce price sensitivity (Wu *et al.*, 2011) because the price is a commonly cited barrier, especially in emerging economies, and one of the reasons for it being a niche commodity. Our results indicate that organic food is considered expensive though affordability remains a moderate barrier (Singh and Verma, 2017; Maruyama and Trung, 2007; Sirieix *et al.*, 2011) for purchase intention, at least to consumers who already buy it. This duality exists as affordability is based on household income. But perhaps the perceived benefits accrued from its consumption was found justified to its perceived cost of purchase (Kavaliauske and Ubartaute, 2014) as consumers tradeoff between economic vs health benefits during food purchase (Sirieix *et al.*, 2011). However, higher price premiums can bring uncertainty in organic food purchase (Seegebarth *et al.*, 2016) beyond a certain point depending upon consumer’s income.

A more favourable appearance in comparison to conventional foods was negatively related to behavioural intention suggesting that consumer’s choice of organic food is not affected by its comparative physical attractiveness to conventional foods.

Regarding the supply-related issue, the availability of organic food did impact their purchase intention as concluded previously in India (Dholakia and Shukul, 2012; Singh and Verma, 2017; Radhika *et al.*, 2012) and other emerging economies (Mohamed *et al.*, 2012; Selvarajah and Geretharan, 2017; Zhu *et al.*, 2013). Supply constraints have also been observed as a limiting factor in developed organic markets (Boys *et al.*, 2014; Fotopoulos and Krystallis, 2002). However, this needs to be understood in the context of the regional consumer’s preferences and food habits that may differ by place and demographics. Availability of unsought organic food choice that does not form part of their consideration set will keep demand unfulfilled.

The degree of control an organic consumer has in deciding what to purchase for food for the household has been found important. Over here, we would like to mention that buyer personally might not be so much interested in consuming organic food but might buy on the request of other family members (Scalco *et al.*, 2017). So, the level of control also pertains to personal choices or on behalf of others and it is possible that not all requests get fulfilled owing to the decision maker’s personal preferences.

Past behaviour was seen as a strong facilitator and appears to substantially contribute to organic food purchase intention (Ajzen, 1991, 2015b).

The weak impact of subjective norms on organic food purchase intention shows that organic food being a niche market product is yet to become an influential social norm in an emerging economy like India, suggesting a barely low influence of family and reference groups (important people) Further, because only organic food consumers were surveyed, they appear to have strong convictions and positive attitudes towards organic food and limited influence of social norms. They seem to prioritize personal goals over collective social thinking, which often leads to higher use of personal attitude instead of social norms in behavioural decisions. So, though purchase intentions can be shared within the family setting, family expectations influence is marginal. Previous studies have found subjective norms to have lower influence (Maichum *et al.*, 2016; Shepherd *et al.*, 1995) or no influence

at all (Paul *et al.*, 2016; Yadav and Pathak, 2016 Maichum *et al.*,2017; Yazdanpanah and Forouzani, 2015) to purchase intention. Alternatively, others have found a stronger positive influence on intention (Pomsanam *et al.*, 2014; Singh and Verma, 2017; Thøgersen *et al.*, 2010).

7. Theoretical implications

Our evidence corroborates the notion that attitude and enablers and barriers (PBC) are the most important factors in organic food consumption. However, organic food markets vary, particularly between developed and developing countries due to local demand and supply conditions. The presence of the intention-behaviour gap in such studies is often highlighted. To minimize the difference, we first chose variables elicited from respondents themselves and developed data collection instrument based on Ajzen (2011) recommended fast principle. Then, we added two variables related to past experience in PBC because past experience is considered similar to future behaviour (Ajzen, 2015a). Additionally, we only included respondents who had bought organic food in the past month. These measures, we believe perhaps would make our findings more realistic because it helps consumers to evoke from their past experience better in the limited time present during the survey.

Further, TPB is sometimes classified as an evaluative and deliberative theory of cognitive nature that uses functional attitude, suitable for high-involvement products and is not relevant for low-involvement decisions like shopping for daily groceries by that uses constructive attitude (Hamlin, 2016; Argyriou and Melewar, 2011), even though Ajzen contends that it can be used for both situations (Ajzen, 2015a, 2015b). Towards this end, we suggest that the TBP survey can be blended with a food choice experiment to bring more clarity on this debate and also to gauge the perceived intention-behaviour gap. Future researchers can validate this suggestion. This finding would enrich the understanding of the TBP in organic food consumption.

We tested individual direct relationships attitude, subjective norms and attitude with intention, though some literature points to an indirect relationship with intention. The importance of this cannot be overlooked for subjective norms, even though it had a weak influence on intention in our study. Because the influence of family, friends and opinion leader remains strong in shaping attitude towards products in general, suggesting that attitude might mediate between subjective norms and intention. The correlations among the antecedents of intention themselves show different magnitude. The strongest correlation was between attitude-PBC ($r = 0.60$), SN-PBC and SN-attitude were weak or negative (Table I). The relationship between PBC and attitude is worth considering as some variables like availability, knowledge and price influence cognitive (beliefs) and affective (emotions/feelings) component of attitude formation towards organic food. Thus, we recommend measuring the correlations among the antecedents of intention as they may show an indirect relationship with intention. This brings us to the issue of same product attributes (variables) conceptualized and subsequently measured interchangeably between PBC and attitude by different researchers that might impact the generalization of results. Often, price and perceived availability are sometimes referred to as a behavioural belief (attitude) or potential barrier (PBC) (Scalco *et al.*, 2017). We have considered price, availability and knowledge variables under PBC because we believe that they refer to the individual control and confidence level and recommend the same.

8. Practical implications

The producers, marketers and government need to increase trust and knowledge among existing and potential organic consumers. The study has practical implications for organic producers and retailers for improving their marketing strategies. For instance, to increase sales, it is important to improve knowledge among consumers. Marketers need to focus on

extrinsic (present outside the product) product attributes like health, nutritional value, food quality, labelling and certification, production process etc. in their messages through various platforms (ads, promotion etc.) for better differentiation from conventional food. These attributes are also classified as credence attributes since these cannot be completely judged by the consumers even after purchase or consumption. To attract new customers, marketers should conduct festivals, contests, organic food get-togethers as this will enable the potential customers to interact and get socially influenced by existing customers, experts and opinion leaders who share their stories, testimonials etc. Use of social media platforms (e.g. Facebook, Twitter etc.) to increase visibility and address consumers concerns would accelerate adoption curve, especially among tech-savvy consumers like youth (Mishra and Ayatham, 2017; Khandelwal *et al.*, 2018) besides lessening their price sensitivity. They can also strengthen the positive attitude towards buying by the increasing availability of relevant food products and explore the utility of new technology like Blockchain (Cuervo-Cazurra *et al.*, 2020) to increase traceability, transparency and consumer trust. Finally, they can offer competitive prices *vis-à-vis* conventional food to increase affordability and market share.

9. Conclusions and future research

The results support the usefulness of the extended framework of the TPB model to predict organic food purchase intention among consumers in Delhi-NCR, India. The study found that consumers in India base their intentions to purchase organic food on personal attitudes, apparently overcoming restrictive factors and ignoring perceived social expectations. Consumers consider organic food healthy but do find a lack of knowledge, availability as barriers for behavioural intention. Affordability of organic food can be a barrier if organic food is beyond their budget. Additionally, organic consumers do not doubt organic food certification. Past behaviour can impact organic food intention strongly.

The study is limited to measuring intention to purchase of organic foods in general rather than the actual organic food purchase behaviour. Although past behaviour was measured which is correlated to future behaviour, there is a need to observe actual buying behaviour because it may differ at the point of sale (Hamlin, 2016). However, the variation may be little because the data was collected at organic food retail points itself. Still, future researchers can complement TPB with food choice experiments. Intention for specific organic products can also be evaluated. The study is limited to organic consumers in Delhi and neighbouring areas and hence may not be a representative sample for India.

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Appendix

Table A1 Constructs/variables and their measuring statements included in the questionnaire

Variables	Items	Scale	Sources
<i>Sub-construct attitude (BB)-Behavioural beliefs, (OE)-Outcome evaluation</i>			
Enjoyable to buy	For me, buying organic food regularly for consumption would be	1-unenjoyable, 7- enjoyable-	Ajzen (2002), Yadav and Pathak (2016), Yazdanpanah and Forouzani (2015), Francis <i>et al.</i> (2004), Ghosh <i>et al.</i> (2016, 2019), Steptoe <i>et al.</i> (1995)
Valuable to buy	For me, buying organic food regularly for consumption would be	1-worthless, 7-valuable	
Good to buy	For me, buying organic food regularly for consumption would be	1-bad, 7-good	
Appearance	Organic food looks worse in appearance compared to conventional food	1-agree, 7-disagree (R)	
Health	For me, buying organic food regularly for consumption would be a/an(BB)	1-unhealthy, choice, 7- healthy choice	
Absence of harmful chemicals*	I am more likely to buy organic food regularly for consumption because of the absence of harmful chemical residue (BB)	1-disagree, 7-agree	
Environment-friendly*	For me, the absence of harmful chemical residue in food is (OE)	-3-unimportant, +3-important	
	I am more likely to buy organic food regularly for consumption because it is environmental friendly (BB)	1-disagree, 7-agree	
Food safety*	For me being environment-friendly is (OE)	-3-unimportant, +3-important	
	I am more likely to buy organic food regularly for consumption because it is a safe food choice (BB)	1-disagree, 7-agree	
Food taste*	For me, food safety is (OE)	-3-unimportant, +3-important	
	For me, buying organic food regularly for consumption would be a tasty choice (BB)	1-disagree, 7-agree	
	For me, taste in food is (OE)	-3-unimportant, +3-important	
<i>Sub-construct subjective norms (NB)-Normative beliefs, (MC)-Motivation to comply</i>			
Important People	Most people who are important to me think I should buy organic food regularly for consumption.	1-false, 7-true	Ajzen (2002), Yadav and Pathak (2016), Tarkiainen and Sundqvist (2005), Yazdanpanah and Forouzani (2015)
Family	What my family thinks I should do, matters to me?	1-not at all, 7- very much	
Friends*	Most of my friends buy organic food regularly for consumption (NB).	-3-false, +3-true	
	When it comes to matters of health, how much would you like to be like your friends? (MC)	1-not at all, 7- very much	
<i>Sub-construct perceived behavioural control (PBC) (CB)-Control beliefs, (CBP)-Control belief power</i>			
Ease of purchase	For me, buying organic food regularly for consumption would be	1-difficult, 7-easy	Ajzen (2002), Yadav and Pathak (2016), Yazdanpanah and Forouzani (2015), Ghosh <i>et al.</i> (2016, 2019), Steptoe <i>et al.</i> (1995)
Perceived cost of purchase	For me, buying organic food regularly for consumption would be	1-cheap, 7-expensive	
Control	I have full control in buying organic food regularly for consumption	1-agree, 7-disagree	
Availability	Having more availability of organic food would make me more likely to buy it regularly for consumption?	1-agree, 7-disagree (R)	
Past behaviour-frequency	In the past month, I have purchased organic food regularly for consumption	1-never, 7-frequently	

(continued)

Table A1

<i>Variables</i>	<i>Items</i>	<i>Scale</i>	<i>Sources</i>
Past behaviour- experience	My experience of buying organic food regularly for consumption in the past has been	1-unpleasant, 7-pleasant	
Trust in organic food certification label*	For me, trust in organic food certification is important (CB) Having more trust in organic food certification label would make me more likely to buy organic food regularly for consumption (CBP)	1-disagree, 7-agree -3-disagree, +3-agree	
Third-party certification*	Third-party organic food certification is more important than first-party (self-declaration by an organic farmer) (CB) Third-party organic food certification instead of first-party (self-declaration by an organic farmer) would make me more likely to buy organic food regularly for consumption (CBP)	1-disagree, 7-agree -3-disagree, +3-agree	
Affordability*	For me buying organic food regularly for consumption would be affordable Having higher affordability of organic food would make me more likely to buy it regularly for consumption (CBP)	1-disagree, 7-agree -3-disagree, +3-agree	
Knowledge*	Do you feel that you need more knowledge of organic food certification process? (CB) Having more knowledge of organic food would make me more likely to buy it regularly for consumption (CBP)	1-disagree, 7-agree -3-disagree, +3-agree	
<i>Sub-construct intention</i>			
Intention	I will try to buy organic food regularly for consumption I plan to buy organic food regularly for consumption I intend to buy organic food regularly for consumption	1-disagree, 7-agree 1-disagree, 7-agree 1-disagree, 7-agree	Ajzen (2002) , Arvola et al. (2008) , Yazdanpanah and Forouzani (2015) ,
Note: *Indirect variables, (R) – Reverse coded			

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