
Exploring how brand experience measurement could be used for integrating marketing and R&D

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Abstract: Based on a brand experience survey done on global mobile phone brands, we have analysed how brand experiences impact brand loyalty and are associated to prior product selections. We have created two conceptual models after doing exploratory factor analysis (EFA) on data collected from Finland (N=468). Our findings indicate that brand experiences of mobile phone brands consist of intellectual, sensory, behavioural, and eco-friendliness related aspects, and that the affective dimension that has earlier been linked to brand experiences is in fact associated more with brand loyalty. Also the perception of eco-friendliness in the brand experience can have an impact on brand loyalty and it is reflected in the product selection. Thus we suggest that integrated marketing and innovation management concentrate on improving the emotions consumers have towards a brand and measure this dimension to track how the brand has succeeded to deliver intellectual, sensory, behavioural and eco-friendliness related brand experiences.

Keywords: brand experience; brand experience measurement; stakeholders; product development; integrated marketing.

1 Introduction

Information on the brand experiences of consumers and stakeholders is needed by integrated sales & marketing, R&D and innovation management teams to answer to the changing requirements of customers, for example, on the eco-friendliness of products. Brand planning and implementation is an integral part of the product innovation and development process, especially in the phases when the look and feel of products is designed. In this phase, it would also benefit the R&D and marketing integration if the brand experience measurement is done properly and the results are used as input in the product innovation and development. So far brand management has focused on affective, behavioural, intellectual and sensory dimensions in the brand experience (Brakus et al., 2009) and how these affect brand loyalty, however, in earlier research it was found that there is also eco-friendliness included as a fifth dimension in brand experiences (Saari, 2016). However, the impact of the eco-friendliness of a brand experience on brand

loyalty and product selection has not yet been studied, and this is the gap that we are tackling in this paper.

Conveying a trustworthy, environmentally and socially responsible image can help to enhance a company’s reputation as well strengthen their customers’ brand loyalty (Siegel, 2009). Often in the case of high-tech products, it is considered that the eco-friendliness is not a selling point (McDonald et al., 2009). The construct of brand loyalty has been studied in numerous studies, and it cannot be simply nor clearly stated what the prerequisites are for brand loyalty. When customers create in their minds so-called brand associations (Aaker, 1992; Keller, 1993; Aaker, 1996; French and Smith, 2013; Keller, 2013) they may also influence their brand experiences (Brakus et al., 2009) and product selections (Bettman et al., 1998; Foxall and James, 2003; Foxall and Schrezenmaier, 2003; Foxall et al., 2004) and both brand experiences and product selections can have an impact on brand loyalty (Brakus et al., 2009; Romaniuk and Nenycz-Thiel, 2013). The characteristics of so-called ‘true’ brand loyalty include the conscious decision to opt for a specific brand from a range of competing brands and it is manifested as a commitment to the brand over time (Bloemer and Kasper, 1995).

The impact of affective and emotional ties to a brand has been found to have a strong impact on brand loyalty. There are references to ‘emotion-based’ brand loyalty (Sharp, 2010; Pawle and Cooper, 2006) and one example of a brand that has very passionate and loyal consumers is Apple (Sharp, 2010). It has also been acknowledged by researchers that brand loyalty is not a constant and it can vary over time (Whitaker, 1978) which can also be seen among consumers as switching behaviour (Duwors and Haines, 1990). Strong brands have been able to maintain strong emotional bonds with their customers that also helps to promote brand advocacy among the customers (Roberts, 2004). Brand love is a concept that is used to refer to emotions that the most committed customers have towards a brand, and it is clearly linked to brand loyalty that manifests itself as repurchasing of the brand and spreading of positive word of mouth on the brand (Carroll and Ahuvia, 2006). It is also understood that products and services have in addition to their functional benefits associated with technical improvements to product features distinct emotional benefits. The way consumers have personally experienced a brand has an effect on their brand loyalty and this has also been referred to the ‘initiator’ in the brand loyalty establishing process (Kim et al., 2008).

To maintain a loyal customer base for a brand, it is essential that the various elements leading to brand loyalty are actively monitored and openly discussed between various organizations within a company and especially the sales & marketing integration with R&D and innovation management is critical. The feelings consumers and stakeholders have toward a brand can be measured and this information is important for the integrated organisation that needs to decide how to improve or maintain the positive emotions and feelings that the consumers and stakeholders have about their brand. And therefore, it is important for companies to concentrate on measuring the affective brand experiences of consumers and stakeholders, in order to get feedback on the possible improvements needed in the products and services. The measurement of the affective responses of consumers and stakeholders to brands is vital as also advertising has started to deploy emotional intelligence to attract consumers (Pawle and Cooper, 2006). The other brand experience dimensions (behavioural, intellectual, sensory, eco-friendliness) should be tracked to get information on the areas that require development on the brand experience level.

Also prior research has shown that for R&D and marketing integration the measures used in acquiring customer knowledge are important (Salojarvi et al., 2015), especially when launching new products (Song et al., 1996) and technology commercialization (Lin et al., 2015). Therefore we suggest that continuous monitoring of brand perceptions among the end users could be used for directing the discussion between marketing and R&D. Figure 1 below shows the conceptual grounding for our study and how brand measurement can be linked to the R&D marketing integration and cross-functional activities.

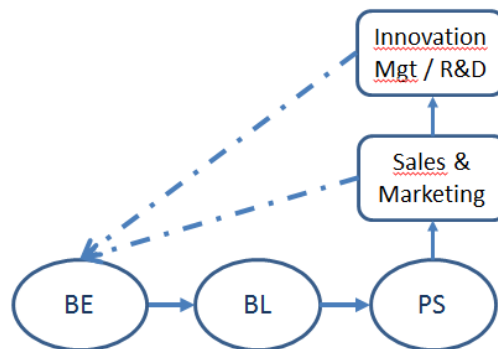


Figure 1 The influence of Brand Experiences (BE) on Brand Loyalty (BL) and further on Product Selections (PS) can be measured and delivered by Sales & Marketing to the Innovation Mgt / R&D teams, and both of these organizations have their own impact on how brand experiences are formed and perceived by the customers who encounter the brand.

The target of this paper is to strengthen the proposition of including an eco-friendliness dimension in the brand experience measurement (BX) scale by developing the conceptual model further to include the construct of brand loyalty, and study how the product selections made by the respondents of the survey indicate brand loyalty.

This submission investigates the following research questions:

1. How does brand experience affect brand loyalty and product selection in the case of mobile phones?
2. What kind of input can product development teams get from the results of brand experience measurements including the eco-friendliness dimension?

2 Case study: global mobile phone brands

This study will focus on comparing three major mobile phone brands that represented the biggest mobile phone Operating Systems (OS) on the market according to their market share reported in 2013: Samsung with Android OS had a 78% market share, Apple with iOS had a 17.5% market share and Nokia Lumia with Windows Phone OS had a 3% market share (IDC, 2014).

Research Design

For this paper, we have first analysed the relationship between the brand experience and brand loyalty on data collected from respondents who have made a brand choice when selecting their product. This analysis will be based on the BX scale items included in the original scale of Brakus et al. (2009) without the dimension of eco-friendliness. Then, we will focus purely on the eco-friendliness of the brand experience and how it impacts brand loyalty, and further how it is reflected by the product selections the respondents have made. The aim is to show how brand experience can have an impact on brand loyalty and how it has impacted the product selection, and also that eco-friendliness can have an impact on brand loyalty and that has been reflected in the product selections made by the respondents.

The data collection method in this research was a web survey that was sent out in an e-mail to 4681 people living in Finland. The survey was open for the respondents in Finland from the 19th of Sep to the 4th Oct 2013. The response rate was 10.8%, when calculated from all of the invitations sent to participate in the survey, and 62.2% when calculated from all the opened questionnaires. Response rates for e-mail surveys are often lower than for traditional surveys sent by post (Cook et al., 2000). In the survey, we used a 7-point Likert scale with an eighth option for “Do not know”. In the analysis phase, all the “Do not know” responses were coded as missing data in the data set. If there would not have been the “Do not know” option, respondents could have selected some other option in cases where they did not truly know how to respond, which could have created some additional noise in the measurement model.

The measurement items from the original BX scale that were used for tracking how the brand experience influences brand loyalty are listed below. The negatively worded items were reduced from the original BX scale as a result of Principal Component Analysis (PCA) for which the results are reported in the Findings section below. In addition, we will be using in the second conceptual model five items to measure eco-friendliness. The statements on eco-friendliness have been tested in an earlier study (Saari, 2016).

Original BX scale items (Brakus et al., 2016):

Affective items

- This brand induces feelings and sentiments.
- This brand is an emotional brand.

Behavioural items

- I engage in physical actions and behaviours when I use this brand.
- This brand results in bodily experiences.

Intellectual items

- This brand stimulates my curiosity and problem solving.
- I engage in a lot of thinking when I encounter this brand.

Sensory items

- I find this brand interesting in a sensory way. (Sight, touch, hearing, taste, and smell).

- This brand makes a strong impression on my visual sense or other senses. (Sight, touch, hearing, taste, and smell).

Negatively worded items

- This brand does not make me think.
- I do not have strong emotions for this brand.
- This brand is not action oriented.
- This brand does not appeal to my senses. (Sight, touch, hearing, taste, and smell).

Additional eco-friendliness items (Saari, 2016)

- By selecting this brand I am not harming the environment.
- This brand creates eco-friendly emotions.
- This brand makes me behave in an eco-friendly way.
- This brand makes an eco-friendly impression. (Eco-friendly = not environmentally harmful) .
- This brand makes me think about the state of the environment.

The respondents of the survey (N=468) have been grouped according to the brand they currently own into three brand owner groups: Samsung brand owners, Nokia brand owners and Apple brand owners, in order to track how their product selection has been impacted by brand experiences and brand loyalty. To verify whether eco-friendliness in the brand experience influences brand loyalty positively, we have also analysed how the owners of the different brands rate the brands on eco-friendliness.

3 Findings

In this study we concentrated only on the three major brands, Samsung, Apple and Nokia/Lumia, and the owners of these brands. Thus we will be using only the data from the responses of the owners of these brands. The sample size for the three brands is 468, and the majority of the respondents, 65.8%, owned a Nokia/Lumia mobile phone (N=333), a Samsung branded phone was owned by 17.4% (N=88), and an Apple branded phone as owned by 9.3% (N=47) of the respondents. Only 6.3% of the respondents had a mobile phone of another brand, and 1.2% of the respondents did not report whether they owned a mobile phone.

In order to verify what was the impact of a positive brand experience on the respondents' brand loyalty and product selection we followed up on the responses to the items that emerged as result from the Principal Component Analysis (PCA) we did on the original BX scale. We conducted PCA with varimax rotation (Janssens et al., 2008) on the full data set collect from Finland (N=506) including also respondents that did not own a Samsung, Nokia or Apple branded mobile phone. Based on the result of the PCA we reduced a few of the items included in the original BX scale so that it suits the data collected on mobile phone brands. The results of the PCA on the original BX scale items are presented in the Table 1 below. As the loading of the negatively worded item "I do not have strong emotions for this brand" loaded only by .200 on Component 3, while the other negative items were closer to .500 and over, we dropped this one item out after the

first PCA. Later, the negatively worded items that loaded on the third component and describe a neutral brand experience were left out in the next round of PCA.

Table 1 PCA on the original BX scale items with the combined response set for the three brands from all the respondents in Finland (N=506).

<i>Measurement items</i>	<i>Component</i>		
	1	2	3
This brand results in bodily experiences.	.844	.143	-.079
I engage in physical actions and behaviors when I use this brand.	.839	.056	-.061
This brand stimulates my curiosity and problem solving.	.780	.272	-.252
I find this brand interesting in a sensory way. (sight, touch, hearing, taste, and smell).	.750	.247	-.339
This brand makes a strong impression on my visual sense or other senses. (sight, touch, hearing, taste, and smell).	.729	.340	-.255
engage in a lot of thinking when I encounter this brand.	.640	.342	.052
This brand induces feelings and sentiments.	.329	.786	.020
I do not have strong emotions for this brand.	-.115	-.731	.200
This brand is an emotional brand.	.488	.704	-.045
This brand does not make me think. .	-.081	-.563	.448
This brand is not action oriented.	-.067	-.065	.835
This brand does not appeal to my senses. (sight, touch, hearing, taste, and smell).	-.257	-.148	.808

In next round of PCA, the affective items “This brand induces feelings and sentiments” and “This brand is an emotional brand” still loaded on the second factor, and the other items on the first factor. In the final round of PCA, we included in addition to the 8 positively worded measurement items the 5 items on eco-friendliness, and the results showed that also all of the items on eco-friendliness loaded on the first component.

In the next phase, Confirmatory Factor Analysis (CFA) was done first to the remaining 8 scale items from the original BX scale (Model 1) and then to the 5 items on eco-friendliness (Model 2). At this point, a clearer picture started to form on how the measurement items were linked to the constructs of brand experience and brand loyalty.

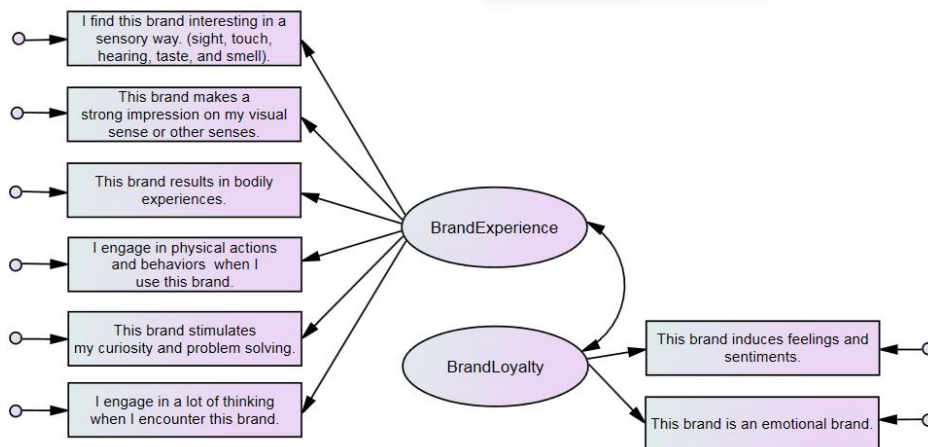


Figure 2 Model 1: CFA with the original BX scale items without the negatively worded statements

The factor loadings and covariances were verified in addition to the model fit indices for both of the models that were tested with the three different data sets grouped according to brand owners. To assess how the data on mobile phones fit the SEM models, the following model fit indices were tracked: the chi-square, TLI and CFI. In this study, we did not use the RMSEA value, as it is not a reliable model fit index when the sample sizes are below 500 (Hair et al., 2010). It is generally recommended that the values for the Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are preferably above .90 (Janssens et al., 2008), however, it is to be evaluated case by case how this recommendation can be applied. Chi-square on the other hand is sensitive to the sample size, and a model that fits well would produce a chi-square close to N (Iacobucci, 2010).

As can be seen in table 2 below, the result of the CFA on Model 1 indicated that for the Samsung brand, the responses from the Samsung owners fit the model the best. In the case of the Samsung brand, the data sets consisting of the responses from the Nokia owners and Apple owner both provided model fit indices that were lower, indicating poorer fit. Also, for the Samsung brand, the covariances between the brand loyalty and brand experience constructs are the highest for Samsung owners.

The factor loadings for all of the items in the case of Nokia and Samsung are above the recommended value of .5 and even over .7 which is the preferred value (Bagozzi and Yi, 2012) this also is an indication of convergent validity and composite reliability. The sample size for Apple was so much smaller than for Samsung and Nokia, and some of the factor loadings are clearly below .5 which would seem to indicate that these specific variables are not well aligned with the other factors, however, in literature, there are some references that state that acceptable reliabilities can be even below .5 and even in these cases the CFA model can be said to fit satisfactorily (Bagozzi and Yi, 2012).

Table 2 Comparison for Model 1 with original BX scale items tested with data consisting of a) Samsung owners’, b) Nokia owners’ and c) Apple owners’ experiences on the **SAMSUNG brand**

<i>Model Fit Indices</i>	<i>Samsung Owners (N=88)</i>	<i>Nokia Owners (N=333)</i>	<i>Apple Owners (N=47)</i>
Chi square	73.230	248.214	52.595
Degrees of freedom	19	19	19
Probability level	.000	.000	.000
TLI	.803	.739	.764
CFI	.896	.862	.876
<i>Covariance</i>			
Br.Exp <->Br.Lty	1.376 (p<. .000)	1.191 (p<. .000)	.826 (p<. .004)

When interpreting the model fit indices for the Nokia brand in table 3 below, it needs to be taken into account that the sample size for Nokia brand owners was remarkably larger than for the other two brand owner groups, and this can be seen in the figures. Even though the chi-square is 190.197, it is still a good one, as the numerical value is well below the sample size. Again, the responses of the owners of the brand being evaluated fit the model the best.

Table 3 Comparison for Model 1 with original BX scale items tested with data consisting of a) Samsung owners’, b) Nokia owners’ and c) Apple owners’ experiences on the **NOKIA brand**

<i>Model Fit Indices</i>	<i>Samsung Owners (N=88)</i>	<i>Nokia Owners (N=333)</i>	<i>Apple Owners (N=47)</i>
Chi square	46.384	190.197	54.233
Degrees of freedom	19	19	19
Probability level	.000	.000	.000
TLI	.924	.742	.661
CFI	.855	.864	.821
<i>Covariance</i>			
Br.Exp <->Br.Lty	.537 (p<. .008)	.908 (p<. .000)	.736 (p<. .01)

In the case of the Apple brand, the results are not reliable, as the sample size is so small. This can be also seen in table 4 below, where contrary to the situation with Nokia and Samsung, the responses from Apple owners do not fit the Model 1 the best. However, based on the other two brands with greater sample sizes, we can state that Model 1 is applicable in the case of mobile phone brands.

Table 4 Comparison for Model 1 with original BX scale items tested with data consisting of a) Samsung owners', b) Nokia owners' and c) Apple owners' experiences on the **APPLE brand**

<i>Model Fit Indices</i>	<i>Samsung Owners (N=88)</i>	<i>Nokia Owners (N=333)</i>	<i>Apple Owners (N=47)</i>
Chi square	63.988	241.518	45.742
Degrees of freedom	19	19	19
Probability level	.000	.000	.001
TLI	.800	.656	.700
CFI	.894	.818	.842
<i>Covariance</i>			
Br.Exp <->Br.Lty	.806 (p< .001)	.992 (p< .000)	.544 (p< .02)

In the second SEM model, we focused solely on verifying how the eco-friendliness in the brand experience impacts brand loyalty. Thus, only the items measuring eco-friendliness were linked to the brand experience construct. To track the impact of eco-friendliness in the brand experience to brand loyalty, the affective measurement items linked to brand loyalty previously were used in the second model as well.

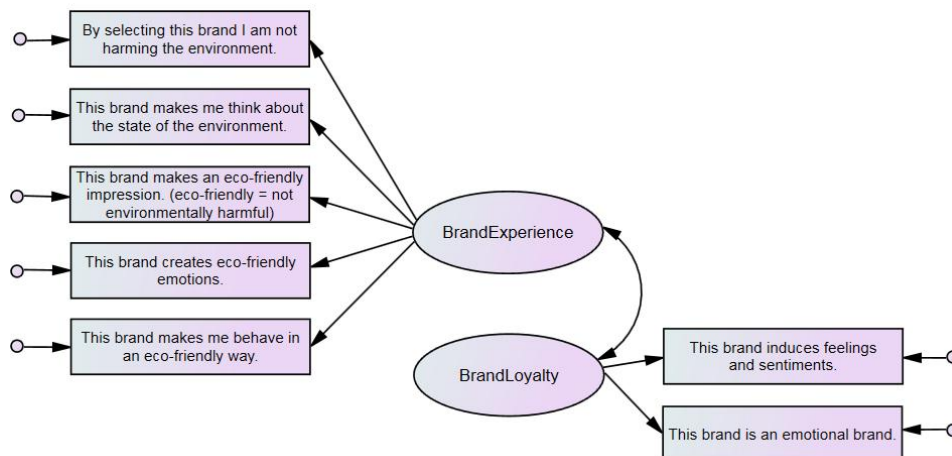


Figure 3 Model 2: CFA with eco-friendliness scale items

The model fit indices for Samsung and Nokia are presented below. However, due to the small sample size of the Apple brand owners group (N=47), the model fit indices are again not reliable as the iterations were not fully successful in Amos. The model fit indices for the Samsung and Nokia brands were better in the case of Model 2 than for the Model 1 presented above.

For both the Samsung and Nokia brands, the factor loadings are well above .6, for all of the measurement items in the model, the lowest being .67 for item “This brand induces feelings and sentiments” in the case of Nokia brand owners responding to questions on the Nokia brand as well as the Samsung brand. However, in the case of the Nokia brand

the factor loadings for the second affective item “This brand is an emotional brand” were the highest from all of the factor loadings at 1.05 among Nokia brand owners.

For the measurement items on the Samsung brand, the model fit indices are again clearly the best in the case of Samsung owners as well as the covariance, as can be seen in table 5 below.

Table 5 Comparison for model 2 with eco-friendliness scale items tested with data consisting of a) Samsung owners’, b) Nokia owners’ and c) Apple owners’ experiences on the **SAMSUNG brand**

<i>Model Fit Indices</i>	<i>Samsung Owners</i> (N=88)	<i>Nokia Owners</i> (N=333)	<i>Apple Owners (N=47)*</i>
Chi square	24.269	72.278	17.890*
Degrees of freedom	13	13	13
Probability level	.029 (p <.05)	.000	.162*
TLI	.936	.890	.930*
CFI	.970	.949	.967*
<i>Covariance</i>	1.167	1.132	.747*
Br.Exp <->Br.Lty	(p< .000)	(p< .000)	(p<.003)*

* The size of the sample consisting of the Apple owners was too small to run successfully the iterations for Model 2 in Amos, and thus the results presented here for Apple are not reliable.

Similarly as for Samsung, for the Nokia brand, the model fit indices are clearly the best in the case of Nokia owners as well as the covariance, as can be seen in table 6 below.

Table 6 Comparison for Model 2 with eco-friendliness scale items tested with data consisting of a) Samsung owners’, b) Nokia owners’ and c) Apple owners’ experiences on the **NOKIA brand**

<i>Model Fit Indices</i>	<i>Samsung Owners</i> (N=88)	<i>Nokia Owners</i> (N=333)	<i>Apple Owners (N=47)</i>
Chi square	48.144	77.853	29.849*
Degrees of freedom	13	13	13*
Probability level	.000	.000	.005*
TLI	.788	.883	.710*
CFI	.902	.946	.865*
<i>Covariance</i>			
Br.Exp <->Br.Lty	.553 (p< .036)	.662 (p< .000)	.399 (p< .128)*

* The size of the sample consisting of the Apple owners was too small to run the iterations successfully for Model 2 in Amos, and thus the results presented here for Apple are not reliable.

In the case of the Apple brand, the factor loadings for all of the items are all well above .65 for all of the brand owner groups, the only exception being again the item “This brand induces feelings and sentiments”.

Table 7 Comparison for Model 2 with eco-friendliness scale items tested with data consisting of a) Samsung owners’, b) Nokia owners’ and c) Apple owners’ experiences on the **APPLE brand**

<i>Model Fit Indices</i>	<i>Samsung Owners (N=88)</i>	<i>Nokia Owners (N=333)</i>	<i>Apple Owners (N=47)</i>
Chi square	31.362	102.783	11.555*
Degrees of freedom	13	13	13*
Probability level	.003	.000	.564*
TLI	.904	.809	1.018*
CFI	.956	.911	1.000*
<i>Covariance</i>			
Br.Exp <->Br.Lty	.839 (p< .000)	.540 (p< .000)	.021 (p< .934)*

* The size of the sample consisting of the Apple owners was too small to run the iterations successfully for Model 2 in Amos, and thus the results presented here for Apple are not reliable.

4 Discussion

This paper proposes that integrated sales & marketing and R&D and innovation management firstly focus on measuring the emotions and feelings that their customers and stakeholders associate with their brands and then track how the rest of the dimensions of BX measurement scale can be developed further to create more positive feelings among the customers and stakeholders. The enhancement of brand experiences could be based on such BX measurements that have been presented in the SEM models in this paper. They also offer a good starting point for the discussions and cooperation between the integrated sales & marketing and R&D and innovation management organizations, as this is required for the further development of brands. The results from BX measurements will help product development teams to understand how consumers and stakeholders experience their branded products and how the brand loyalty is demonstrated on the affective dimension. The sales & marketing organization could be the source of this information if the integration between it and the R&D including innovation management activities functions seamlessly and effectively.

As can be seen in the results of our SEM models, it is becoming also increasingly important to acknowledge that the eco-friendliness of the brand is a crucial element in the brand experience of also mobile phones nowadays, and it can help to increase the brand loyalty of consumers and stakeholders. This can also have a further impact on future product selections, when customers opt for the brand with which they can associate earlier positive experiences. Also the impact of eco-friendliness in the brand experience can have a positive influence on brand loyalty, and this has a clear connection with the product selection that the respondents have made. The contribution of this research to high-tech product management research is that it proves that the eco-friendliness dimension is an important aspect in the measurement of the entire brand experience of

consumers and stakeholders and it can have an impact on brand loyalty as well as product selections.

One of the limitations of this study is that the product selection information has been collected after the respondents have already selected and purchased the product. This may have a favourable impact on the scores, so that the brand the respondents own and know the best is rated the highest. However, this is at the same time an indication of brand loyalty, in which case respondents truly consider the brand they have currently in their possession to be the superior one when compared to the other available brands. We managed to prove that in the case of mobile phones, brand experiences indeed have an effect on past-directed satisfaction judgements, however, the future-oriented brand loyalty needs to be studied with a slightly different approach to capture the respondent perceptions immediately prior to a purchasing event.

It also needs to be taken into account, that the way the respondents experience brands in different countries can vary greatly and as one of the brands in this study, Nokia, is felt to be very strongly local in Finland, and thus the home country bias can also have an impact on the findings (Riefler, 2012). Further research on this topic needs to be done also in other countries. It also still needs to be verified in future research whether it is actually the brand loyalty construct that the affective measurement items are linked to, or is it some other construct.

The practical implication of the findings is that the results can help companies to see the importance of conducting periodical brand experience measurements of their brands, especially in the case of new eco-innovative products and solutions. The results of the measurements could be used to improve the innovation and development process of eco-friendly products and also facilitate deep integration of marketing and R&D functions’ work, as clear and quantitative measurement of stakeholders’ experiences may be used on the practical level to guide the operations.

Conceptual and structural models in marketing need to focus more on the relationship between economics and psychology, as the models can explain behavioural processes that also lead to improved prediction of possible market outcomes (Chintagunta et al., 2006).

References

- Aaker, D. A. 1992. The Value of Brand Equity. *Journal of Business Strategy* [Online], 13.
- Aaker, D. A. 1996. *Building Strong Brands*, New York: The Free Press.
- Bagozzi, R. & Yi, Y. 2012. Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, 40(1), pp 8-34.
- Bettman, J., Luce, M. & Payne, J. 1998. Constructive consumer choice processes. *Journal of Consumer Research*, 25(3), pp 187-217.
- Bloemer, J. & Kasper, H. 1995. The Complex Relationship Between Consumer Satisfaction and Brand Loyalty. *Journal of Economic Psychology*, 16(2), pp 311-329.

- Brakus, J. J., Schmitt, B. H. & Zarantonello, L. 2009. Brand Experience: What Is It? How Is It Measured? Does It Affect Loyalty? *Journal of Marketing*, 73(3), pp 52-68.
- Carroll, B. & Ahuvia, A. 2006. Some antecedents and outcomes of brand love. *Marketing Letters*, 17(2), pp 79-89.
- Chintagunta, P., Erdem, T., Rossi, P. & Wedel, M. 2006. Structural modeling in marketing: Review and assessment. *Marketing Science*, 25(6), pp 604-616.
- Cook, C., Heath, F. & Thompson, R. 2000. A meta-analysis of response rates in Web- or internet-based surveys. *Educational and Psychological Measurement*, 60(6), pp 821-836.
- Duwors, R. E. & Haines, G. H. 1990. Event History Analysis Measures of Brand Loyalty. *Journal of Marketing Research*, 27(4), pp 485-493.
- Foxall, G. & James, V. 2003. The behavioral ecology of brand choice: How and what do consumers maximize? *Psychology & Marketing*, 20(9), pp 811-836.
- Foxall, G. & Schrezenmaier, T. 2003. The behavioral economics of consumer brand choice: Establishing a methodology. *Journal of Economic Psychology*, 24(5), pp 675-695.
- Foxall, G. R., Oliveira-Castro, J. M. & Schrezenmaier, T. C. 2004. The behavioral economics of consumer brand choice: patterns of reinforcement and utility maximization. *Behavioural Processes*, 66(3), pp 235-260.
- French, A. & Smith, G. 2013. Measuring brand association strength: a consumer based brand equity approach. *European Journal of Marketing*, 47(8), pp 1356-1367.
- Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. E. 2010. *Multivariate data analysis - A Global Perspective*, 7, Upper Saddle River, NJ, USA: Pearson.
- Iacobucci, D. 2010. Structural equations modeling: Fit Indices, sample size, and advanced topics. *Journal of Consumer Psychology*, 20(1), pp 90-98.
- IDC, I. D. C. 2014. *Smartphone OS Market Share, Q4 2014* [Online]. Available: <http://www.idc.com/prodserv/smartphone-os-market-share.jsp> [Accessed 21 Mar, 2015 2015].
- Janssens, W., Wijnen, K., De Pelsmacker, P. & Van Kenhove, P. 2008. *Marketing Research with SPSS*, Essex, England: Pearson Education Limited.
- Keller, K. L. 1993. Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*, 57(1), pp 1-22.
- Keller, K. L. 2013. *Strategic Brand Management. Building, Measuring, and Managing Brand Equity.*, 4, Essex, England: Pearson Education Limited.
- Kim, J., Morris, J. D. & Swait, J. 2008. Antecedents of true brand loyalty. *Journal of Advertising*, 37(2), pp 99-117.

- Lin, Y., Wang, Y. & Kung, L. 2015. Influences of cross-functional collaboration and knowledge creation on technology commercialization: Evidence from high-tech industries. *Industrial Marketing Management*, 49(128-138).
- McDonald, S., Oates, C., Thyne, M., Alevizou, P. & McMorland, L. 2009. Comparing sustainable consumption patterns across product sectors. *International Journal of Consumer Studies*, 33(2), pp 137-145.
- Pawle, J. & Cooper, P. 2006. Measuring emotion - Lovemarks, the future beyond brands. *Journal of Advertising Research*, 46(1), pp 38-48.
- Riefler, P. 2012. Why consumers do (not) like global brands: The role of globalization attitude, GCO and global brand origin. *International Journal of Research in Marketing*, 29(1), pp 25-34.
- Roberts, K. 2004. *Lovemarks: The Future Beyond Brands*, New York.
- Romaniuk, J. & Nenycz-Thiel, M. 2013. Behavioral brand loyalty and consumer brand associations. *Journal of Business Research*, 66(1), pp 67-72.
- Saari, U. 2016. *Eco-Friendliness in the Brand Experience of High-Tech Products*. Doctoral dissertation, Tampere University of Technology.
- Salojarvi, H., Ritala, P., Sainio, L.-M. & Saarenketo, S. 2015. Synergistic effect of technology and customer relationship orientations: consequences for market performance. *Journal of Business & Industrial Marketing*, 30(5), pp 511-520.
- Sharp, B. 2010. *How Brands Grow: What Marketers Don't Know*, Australia: Oxford University Press.
- Siegel, D. 2009. Green Management Matters Only If It Yields More Green: An Economic/Strategic Perspective. *Academy of Management Perspectives*, 23(3), pp 5-16.
- Song, X. M., Neeley, S. M. & Zhao, Y. Z. 1996. Managing R&D - Marketing integration in the new product development process. *Industrial Marketing Management*, 25(6), pp 545-553.
- Whitaker, D. 1978. Derivation of a Measure of Brand Loyalty Using a Markov Brand Switching Model. *Journal of the Operational Research Society*, 29(10), pp 959-970.