"Interesting!" – Your Visit to the Norwegian Petroleum Museum

Anouk B.M. Evers

University of Stavanger

Faculty of Social Sciences

Norwegian School of Hotel Management

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Figure 1: The World's Largest Drill Bit –

Source: The Norwegian Petroleum Museum

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"Interesting!" – Your Visit to the Norwegian Petroleum Museum

AUTHOR	ADVISOR:
Anouk Bettine Maria Evers	Torvald Øgaard Øystein Jensen

Student number:	Name:
227420	Anouk Bettine Maria Evers

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Acknowledgments

This paper as initiated by the university of Stavanger and Nord University in Norway, has established useful insights into the development of public and visitors´ interest in topics presented at museums – such as [Offshore] Petroleum- the main subject of the Norwegian Petroleum Museum. I want to express my gratitude for the help provided by professor Øystein Jensen, professor Torvald Øgaard, and manager Siri Vinje and colleagues at the Petroleum museum for enabling data collection for this exploratory research. This paper has functioned as the foundation and fuel for further explorations.

Abstract

Norway – known for its natural resources of Petroleum, is on the rise to become a popular cultural destination. This research study aims to support museums in providing useful insights into what sparks, and in particular, what develops public and visitors´ personal [cognitive] interest in topics presented at museums or sites. Subjects – such as [offshore] petroleum, are presented at the Norwegian Petroleum Museum. The central question is whether, and how visitors´ level of personal interest can be identified and the interest level significantly increases after museum visitation. Museum visitation is on the rise in Norway, however from a global perspective, faced with visitor declines. Grounded on items developed in theoretical works, n=145 self-administered questionnaires measured local and international visitors interest level on the central subject [offshore] Petroleum – oil and gas as presented at the museum. In addition, qualitative notions have been explored. Empirical results have shown museums building around a specific topic of interest as the Norwegian Petroleum Museum – mainly attract visitors with prior established interest and prior knowledge in the subject presented. Interest development – denotes an increase in visitors´ interest level, as appeared significant. Results findings suggest the usefulness in further exploring levels of interest as proposed in previous research. A cognitive approach has seemed valid, as the majority of open-ended responses were cognitive in nature, as similar to preferred exhibitions. Museum presentation methods of subjects presented call for a combination of stimulating multiple senses [text, sound] by novel technological means. Future multidimensional measures can add to current prior- and after measures, by time and frequency analysis and observations during visitation. Dynamism helps predict interest and performance over time.

Key words: Individual Cognitive interest, Development, Learning, Exhibitions, Presentation methods, Museum visitation, Petroleum – oil and gas.

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I. Introduction

The Research Focus

Norway – known for its rich resources of Petroleum as found in the NCS of the North Sea, is however on the rise to becoming an increasingly attractive cultural destination. Norway aims to sustain its culture for its own inhabitants, and regards culture central to the touristic visitation to the nation. Culture as stated by the Norwegian government is central in sustaining the destinations' unique identity (statsbudsjettet, 2016). In all, "culture plays a key role in all societies around the world, influencing various facets of peoples' lives, from leisure to professional activities" (UNESCO, 2009). Public interest in subjects of cultural significance such as in the case of Norway: [Offshore] Petroleum – oil and gas, can be developed by different approaches. *Petroleum* is derived from the medieval Latin literally meaning rock oil, defined "an oily, thick, flammable, usually dark-colored liquid that is a form of bitumen or a mixture of various hydrocarbons, occurring naturally in various parts of the world and commonly obtained by drilling: used in a natural or refined state as fuel, or separated by distillation into gasoline, naphtha, benzene, kerosene, paraffin" (Petroleum, 2016). Revolved around the subject Petroleum – as having functioned as the key resource for the current economy, the industrial heritage plan for the influential offshore petroleum industry in Norway has led to the establishment of the Norwegian Petroleum Museum. Located at the Stavanger harbour as opened in 1999, the architecture of the museum awakes public "interestedness" as the main the building resembles a rather unusual massive block of Norwegian bedrock – as coupled to three noticeable cylindrical platforms standing out in the sea resembling offshore platforms – wharfs for oil rigs at the dock, as shown in Figure 2.

Figure 2: The Norwegian Petroleum Museum, Stavanger. Source: Researcher.

The museum has in itself become an important part of the cities appeal. Information provided on the central topic [offshore] petroleum is elaborated inside the museum by means of a mapped journey in which visitors explore various exhibitions, models, technological developments and real artefacts. The main subject offshore petroleum – oil and gas, is elaborated by means of related topics of among others geology, seismic technology, safety, diving and economics. Petroleum as a central subject of interest – at least to the Norwegian culture and economy, has become of increased global public interest. An individual's interest is a subject is content-specific and relates to modern cognitive theories of knowledge acquisition, as one continuously builds upon acquired information (Schiefele, 1991). As stated by Dahl, Entner, Johansen and Vittersø (2013) the concept of interest can be regarded the cognitive appraisal of an affective interest experience. As research has established their interrelatedness, results have shown affective and cognitive engagement experiences however act independent of each other (Krapp & Prenzzel, 2011; Dahl et al. 2013). Emotions can create a sense of "interestingness" other known as situational interest triggered in the moment, however fleeting and of either positive or negative influence (Hidi, 1990). Cognitive interest moves beyond the situational condition towards a longer term goal of acquiring knowledge through education, as useful for evaluation (Krapp & Prenzel, 2011).

Museums aspire to act a centre for new knowledge and inspiration. However, museums from a global perspective have become under threat. Measuring decreases in

museum visitation, visitor numbers as for example in the United Kingdoms' major museums of national pride as the British Museum have recently fallen by 1.4 million in 2016 (The Guardian, 2017). Interest in cultural topics of significance at presented in museums of national pride are challenged to spark or develop existing interest in the subject presented, as interest is often kept 'alive' for a short period of time (Krapp & Prenzel, 2011). There is evidence on how to create [situational] interest and participation, however less evidence is developed on how to hold and sustain interest, and how to transform "sparked" interest into cognitive engagement in developing a better understanding (Blumenfeld, Kempler & Krajcik, 2006). Research efforts hence have to increase their efforts in providing useful information to museums, exhibitioners and guides on how to best present contents to better hold, and further develop existing visitor interest (Dahl et al., 2013). Argued by contemporary research on museums – in particular works of Hidi and Renninger (2006) and Dahl et al. (2013), practical insights can result from applying a multiphasic perspective in analysing interest development by modern cognitive theories.

This paper – from a cognitive standpoint, will revolve around the development of individual cognitive interest, by first elaborating on the background, purpose, central research questions and the novelty of this paper as outlined. The theoretical review will outline of the most relevant approach and [cognitive interest] predictors as to be measured, as presented in the research model. The chosen exploratory research method is outlined and results presented. Based on the latter conclusions are drawn and future research suggested.

The Research Background

Museums are of national and international importance, acting as centres for preservation of regions and cultural sites (Günlü, Pırnar & Yağcı, 2009). Stimulating visitor and public interest in topics of cultural significance presented in museum or original sites is of key importance, hence the quality of presented information during museum (re)visitation

optimized (Rowe & Nickels, 2011). In the process, developing interest in topics presented in museums is central to the development of cultural tourism and the quality of public learning and teaching (Dewey, 1913; Mitchell, 1993).

Even though research has argued for increased efforts directed at interest development the interest concept has been given limited attention in contemporary scientific works. As conducted by Dahl et al. (2013), the concept of interest is best measured from a dynamic multi-stage perspective, as developing over time. Research can establish the significance of the increase in interest before and after museum visitation, and as stated by Krapp (2002) reveal which factors most account for - hence explain the development of personal interest in a given presented topic**.** Insight into the development of interest contributes to new scientific knowledge on how to best develop and sustain the cultural understanding during the process of visitation. Multiphasic before and after measures on visitors' cognitive interest outcomes derived from visitation to a museum can be captured and classified (Dahl et al., 2013). Resulting information is key to attract new and returning visitors.

The Research Purpose

The main purpose of this paper is to support cultural sites and museum settings in establishing and develop public interest in museum visitation, establish prior interest in the subjects presented and to offer managerial best-practices. This research aims to contribute to science in further exploring and testing the concept and usefulness of interest development in the context of museum visitation. In all, the following research objectives are stated:

(1) Measure the existence of interest development by means of museum visitation

(2) Develop a better understanding of the role of museum exhibitions

(3) Measure preferred presentation methods of a subject in a museum setting

Focused on before and after visitation, this paper will establish additional insights into the future potential for essential data collection during the process of museum visitation.

Research Questions

Krapp & Prenzel (2011) hold typical stages in the development of interest can be identified. In testing the latter notion in the context of subject-related visitor interest, a cognitive approach is applied. In the process of analysing interest in the subject Petroleum – as central subject at the Norwegian Petroleum museum – the following relevant research question is stated: Whether, how and why personal subject-related interest develops and deepens? In order to explore the latter, the following sub questions were explored:

i. What is the visitors [subject-related] interest and knowledge level regarding the subject of the museum prior to visitation?
ii. Can typical stages in the development of interest be identified?
iii. What presentation methods are preferred?
iv. Which exhibitions are most memorable?
v. What is the overall experience of museum visitation?

Research Novelty

This research (re)tests previous hypothesis of among other of (Krapp & Prenzel, 2011) whether the typical stages in the development of interest be identified. However as previously works either focus on affective aspects or combining cognitive and affect, this paper explores the possibilities for a cognitive perspective. Quantitative analyses and exploring for novel qualities adds new knowledge. Additional new knowledge is to be established as the future challenge lies in how to best measure personal cognitive interest from a multi-phasic perspective in the context of future rapid digitalization and faster modes of transportation. Research ought to increase reliability and validity in data collection methods and dynamically capture visitors' interest, during the process of visitation. The present study aims to explore ways on how to best predict future and hedonic visitors´ interest as they move between screens and scenery.

II. Literature Review

The concept of interest as regarded a psychological state, can function as a predisposition in order to re-engage in content during multiple phases of development (Hidi & Renninger, 2006). From a humanities' research perspective interest holds the affective and cognitive relationship with a given subject or object, hence indicating subject- or object relatedness (Krapp, 2002; Renninger & Hidi, 2011). Stimuli can spark emotions that increase or decrease cognitive engagement in a subject or object of potential individual cognitive interest (Harp & Mayer, 1997). Learning based environments support the development of interest. Authenticity, inquiry, collaboration, and technology are found to be motivational factors to interest as found to stimulate engagement in content presented to spark interest or develop a deeper individual [cognitive] understanding (Blumenfeld et al., 2006). Interest has been mainly analysed and explored from [intrinsic] affective and motivational approaches, however later research noted the latter to neglect some significant aspects of interest in particular noting the lack of an educational point of view. The concept of interest as established by Herbart in 1806, closely relates to learning. Analysis of interest development is useful from a cognitive perspective as interest allows for the recognition of objects. Interest can lead to meaningful learning, long-term storage of knowledge and provides the motivation for further learning (Schiefele, 1991). Research by Dewey (1913, 1975) over the years separated interest-oriented learning from effort based-learning. Whereas interest-based learning has a clear purpose, effort based learning lacks mental purpose. Dewey argues interest is characterized by an active "propulsive" state based on real objects and higher personal meaning. Visitors' interest in a subject or theme can be sparked and or further developed. Visitors can be actively engaged in novel topics by means of interactive presentations and exhibitions as presented in a museum setting or a performance at original sites. Concreteness and cohesion in exhibitions, as to be later re-connected and holistically as

seen as a whole – have a positive influence on interest (Sadoski, Goetz, & Rodriguez, 2000). Cognitive explanatory methods and unexpected surprising content are found to spark positive affective responses (Schraw, Bruning, & Svoboda, 1995), fuel for later exploration.

Individual Interest development

Multiphase perspectives applied in the analyses of individual cognitive interest has led to the concept of interest development, as tested in numerous scientific works including Dewey (1975), Renninger & Hidi (2002), and Dahl et al. (2013). *Development* reflects the process that contributes to individuals´ motivation to actually engage in an activity. The actualization of an existing prior- personal interest is part of a developmental approach (Krapp, 1992). Relevant empirical investigations on personal interest have been conducted on the development of literary interest in high school (Schiefele & Stocker, 1990). Furthermore the quality of experience related to interest has been analysed (Schiefele, 1991). Multiphasic analyses on interest have identified four general stages of interest development: (1) triggered situational interest as activated by external stimuli; (2) Stabilized, or maintained situational interest lasting during a certain (limited) learning phase. The prior stages can develop into (3) an emerging individual cognitive interest towards a final (4) well-developed personal interest. Personal interest holds an enduring predisposition to engage in a certain object area of interest (Krapp & Prenzel, 2011). Developed by Hidi and Renninger (2006) as based on scientific works of cognitive theories, the multiphasic model as shown in figure 1 can function as a theoretical and procedural reference to analysing the process of individual interest development and identify current interest states based on conditional factors and the persons actualized state (Hidi and Renninger, 2006).

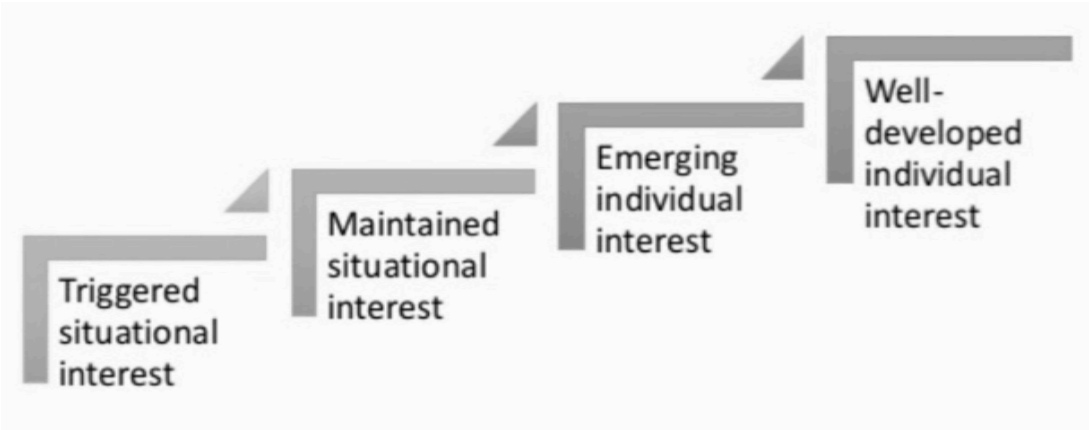


Figure 3. The Four-Phase Model of Interest Development. Source: Hidi and Renninger (2006).

As outlined in Figure 2 presenting in the four-phase model of interest development proposed by Hidi and Renninger (2006), interest – develops over time. The four-phasic model represents how interest can develop. The model enables to identify the phase investigated. The multiple stages help to better interpret and report findings, and gives insight in how to develop interest for particular content. Each consecutive interest phase of interest development is characterized by varying amounts of affect, knowledge, and value (Hidi & Renninger, 2006). Regarding the development of interest throughout multiple phases, the primary situational interest is triggered, as further developed into a maintained situational interest. Situational interest can develop into personal interest – essentially cognitive as of the main interest in this paper. Personal interest is to be established based on prior-knowledge. Moving beyond situation interest as mainly sparked affectively, personal interest mainly develops cognitively. Emerging cognitive individual interest as shown in phase three further develops into the final fourth phase of well-developed individual interest. Achieving well developed personal cognitive interest requires effort, as the process holds the accumulation of particular knowledge and skills, to result in competency. In all, enduring personal interest can result in competency, lasting positive affect and personal meaning (Dahl et al., 2013).

Whereas some individuals have obtained a well-developed personal interest, others need to be fostered situational interest as "sparked" within the context (Blumenfeld et al., 2006).

Predictors. Individual interest is context dependent as noted depends the background of the individual and the learning. Arguing for the importance of an individual's background in the development of interest, the proposed interest predictor of prior knowledge is based on cognitive interest theory arguing topics become increasingly interesting when having established prior-knowledge regarding the presented topic (Kintsch, 1980). Prior knowledge is an important factor as visitors are more willing to learn (comfortable) when having obtained pre-knowledge (Dahl et al., 2013). A general lack of prior knowledge makes acquiring new knowledge difficult (Blumenfeld et al., 2006).

Visitors´ interest in topics presented at museum settings can be explored by analyses of visitors' pre-knowledge, however as connected to established prior interest in order to reach [cognitive] personal interest after visitation. The latter can establish a better understanding of the effect of presentations exhibitions on a person's interest and their overall positive satisfactory experience of the museum or site (Krapp & Prenzel, 2011). In line with the studies and as noted in similar theoretical works cognitive interest can be measured as the dependent variable with the variables of visitor background holding the predictors of prior knowledge and prior interest (Dahl. et al.,2013). As for contextual situational factors – the qualities comprehension, vividness, and cohesion – known as "cognitive accessibility" have a positive effect on interest development. Cognitive accessibility mainly relates to the exhibitions and museum setting, focused on how the central subject is presented (Blumenfeld et al., 2006).

Interest can be regarded the cognitive appraisal of an affective interest experience. Affect and cognition are related however act independent of each other (Krapp & Prenzel, 2011; Dahl et al., 2013). Pleasure plays an indirect – either negative or positive role in the

development of cognitive interest (Dahl. et al., 2013). Pleasure and affect as independent can be analyzed in qualitative notions as expressed by respondents on open-media sites. Based on the literature review, the following hypothesis are stated:

H1: Prior-knowledge positively effects individual interest levels

H2: Prior-Interest positively effects interest levels

H3: Cognitive accessibility positively effects individual interest level

The hypothesis is to be tested by means of a process as described by the research model in Figure 4. With a focus on cognitive input, output of interest development is analysed.

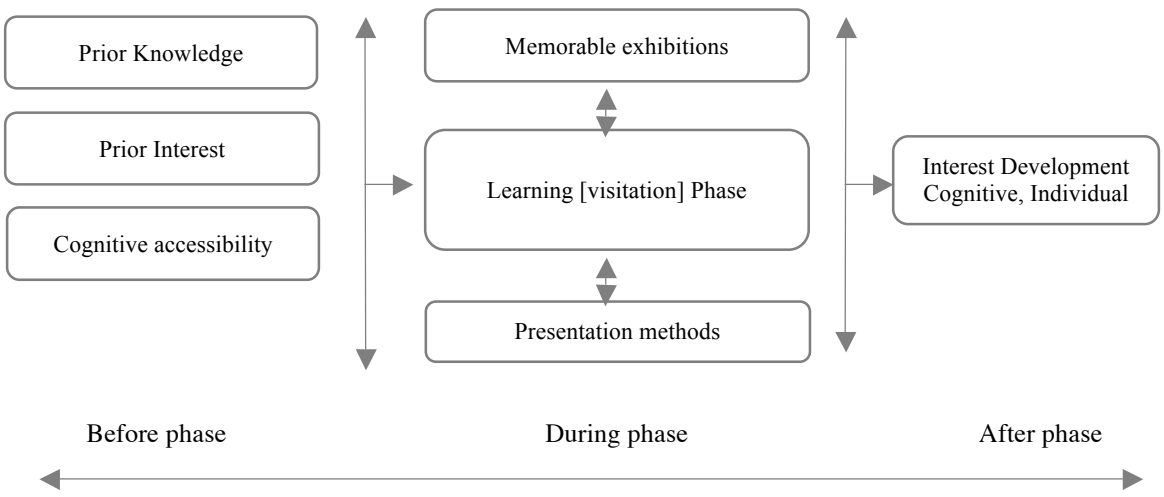


Figure 4: Research model visualizing the process of [cognitive] individual interest as a result of visitor background and the experience of museum visitation.

III. Methodology

Literature review revolving around interest has been focused on either affective or cognitive motivational aspects. Higher level multistage cognitive approach to interest –, is limited. Calling for further cognitive approaches, interest can be regarded the cognitive appraisal of an affective interest experience and affective aspects to act independent of each other (Dahl et al. 2013). Analysis of cognitive interest development starts with lower levels of "interestingness" [situational interest], after which a higher level cognitive interest level can

be identified, if present. The latter cognitive approach builds upon and beyond the context in analysing the accumulation of knowledge, information useful for evaluation (Krapp & Prenzel, 2011). Theoretical reviews have identified relevant measurement scales for the purpose of measuring lower level situational interest. The SIQ [Sources of Interest Questionnaire] as developed by Schraw et al. (1995) measures situation interest. Useful cognitive items within the SIQ [those revolving around interest and knowledge] were extracted, combined with a dynamic path modelling method as applied by Dahl et al. (2013). Path modelling is in line with the Four-Phase Model of Interest Development as developed by Hidi and Renninger (2006). Exploring qualitative responses and found on open media sites [Tripadvisor] contributes to validity in opening up identification of missing or novel relevant factors in interest development and identifying related affective qualities. In all, a combination of quantitative as supported within qualitative self-reported notions was the main research method. Data collection was based on the cognitive factors as derived from previous research related to interest. Multi-phased in nature – the process of analysis was mainly developed before and after visitation. In addition, the potential for observations during the process of visitation has been explored.

Sampling

In order for the sampled population and the target population to be similar to one another - data collection at the Norwegian Petroleum Museum took place during the touristic season of August 2016. In order to include local and international visitors, a stratified random sample based on country of residence was obtained. The data collection was stopped once resulted into mutually exclusive strata [local and international visitors]. Self-expressed visitor narratives were extracted from open media sites [Tripadvisor] based on time of publishing, in line with data collection.

Self-Administered Questionnaires

Quantitative data was collected based on self-administered questionnaires present at the museum exit and entrance, presented in English and Norwegian. An introductory text invited the visitors to participate in the study holding the text "Dear visitor, thank you for visiting! Hereby we kindly ask you to spend the last few minutes of your time filling in the questionnaire after visitation. This research is part of an important international research project as initiated by the University of Stavanger and Nord University in Norway - titled *International research project by the university of Stavanger and Nord University – Visitor interest and experiences at the Norwegian Petroleum Museum" – Besøkendes interesse og opplevelse av Norks Oljemuseum*".

Questionnaire items were extracted from the SIQ [Sources of Interest Questionnaire] as developed by Schraw et al. (1995). Chosen items were among others based on prior knowledge, my means of stating "the content contained information I already knew" (prior-knowledge). Questionnaires mainly revolved regarding pre-knowledge, prior interest, cognitive accessibility and the level of interest after visitation. Difference in interest development and prior interest ranging from [1 to 5] are analysed for significant difference in level of interest. Additional relevant question items included questions on preferred or "memorabl"' exhibitions and presentation methods as applicable to museums settings. For all question items, a five-point Likert-like scale was chosen.

IV. Results

This section gives an overview of quantitative and qualitative study results as collected in order to develop a better understanding of – [individual] cognitive interest development, experience of museum exhibitions, and perception on presentation methods within museum settings. Satisfaction measures were additionally included. Quantitative measures give a general insight into personal interest development – hence more detailed qualitative open-

ended notions were included. Qualitative data was derived from open-media sites of [Tripadvisor] during the time of data collection [august 2016]. Insight into frequently noted novel qualities was generated from qualitative data, including responses on relevant notions of "interest" and "petroleum".

In total, *n*=145 complete questionnaires were collected as a result of self–administered quantitative questionnaires as filled in by visitors present at the Petroleum Museum. Of the total of *n* =145 respondents, 60% was female, as 40 % was male. The average [*M*] age of the sample was 34 years old with a standard deviation of *SD*= 14 as ranging from 10 –78 years. The sample mainly included residents from Norway (49%), Germany (25%), United Kingdom (18%), United States (10%), France (9%) and the Netherlands (8%). Visitors [foreign nationals] were mostly on a self-organized trip (48%), visiting friends and family (18%) or part of a pre-booked cruise ship visit (14%), in the line with general visitation, hence population to the Norwegian Petroleum museum.

Personal interest

In order to measure interest development, the explanatory cognitive factors of pre-knowledge, pre-interest, established interest and affective experience [as argued of central relevance in research on cognitive interest] was measured based on 5-point Likert like scales. The Questionnaire as shown in the attachments, holds question items ranging from 1-5 [holding statements if interested, presenting the visitors position from 1 to 5, where 1= Strongly **dis**agree and 5= Strongly agree]. The average pre-knowledge was measured as relatively high (4). In line with the latter, pre- interest results were equally high as measured by an average *M= 3.5*. Established interest development after visitation was measured by an average *M*= 3.82. An overview of quantitative outcomes is presented in Table 1.

Table 1. Means and Standard Deviations for All Variables.

General Interest of the main theme; Petroleum	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
Interest Before I had a general interest in the main theme already before the visit	144	1	5	3.47	1.10
Knowledge Before I had a good knowledge of the main theme already before the visit	145	1	5	2.82	1.19
Personal interest The visit to this museum has increased my interest in the main theme	143	1	5	3.82	.86
Cognitive accessibility The presentation of the main theme was very stimulating and engaging	144	1	5	4.17	.85

Table 2. Means and Standard Deviations for All Variables.

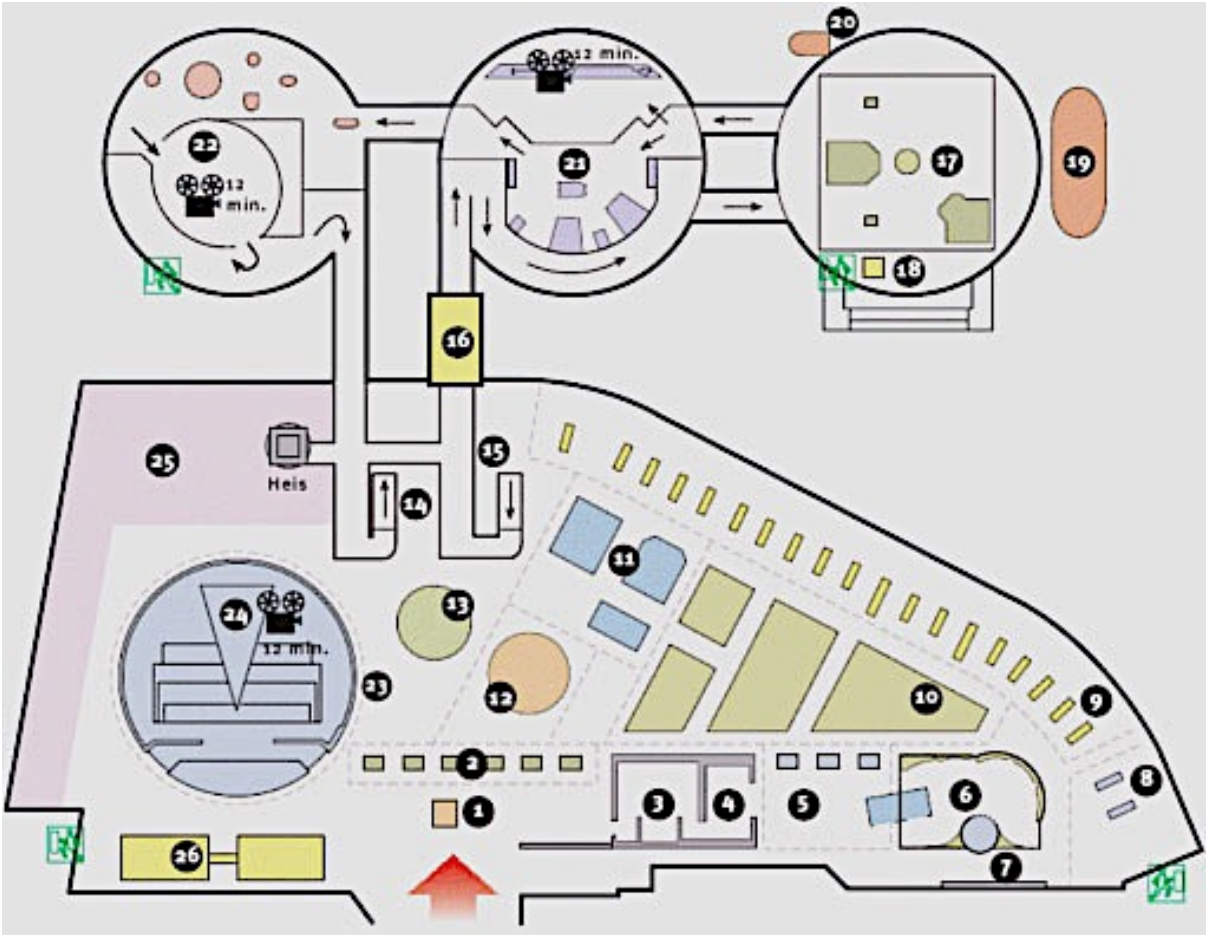
General Interest of the main theme; Petroleum		Interest Before	Knowledge Before	Cognitive accessibility
Interest Before	Pearson Correlation	1	.662**	.252**
	Sig. (2-tailed)		.000	.002
	N	144	144	144
Knowledge Before	Pearson Correlation	.662**	1	.039
	Sig. (2-tailed)	.000		.639
	N	144	145	144
Cognitive accessibility	Pearson Correlation	.252**	.039	1
	Sig. (2-tailed)	.002	.639	
	N	144	144	144

**. Correlation is significant at the 0.01 level (2-tailed).

The scales measuring the general visitors interest of the main theme petroleum, based on prior interest before visitation, prior-knowledge and cognitive accessibility – however based on single items an alpha level of .6 was established and factor loadings extracted a single factor. Factor loadings on prior interest measured .92, prior knowledge .86, and cognitive accessibility by a loading of .37. Analysis of personal (cognitive) interest as the dependent upon prior-interest, prior-knowledge and cognitive accessibility led to an explanatory R value of .56. and R Square of .31.

Museum Exhibitions

Question items included visitor's perception on the most memorable exhibition sections at the museum in order to develop a better understanding of the situational interest and cognitive accessibility of exhibitions. Participants were asked to select two exhibition sections from the total 35 exhibitions in the museum, indicating which exhibition the visitor remembered the most. By responding to given statements, the rating score that best presented their position was based on 1= strongly disagree to 5= strongly agree. An overview of the exhibitions to be chosen is presented in Figure 5.



EXHIBITIONS

1 World's largest drill bit
2 Prologue
3 History of the Earth
4 Mapping the past
5 Norwegian continental shelf
6 Oiling the economy
7 Drill bits
8 A seafaring folk
9 Ever deeper water
10 Model collection
11 A universe below
12 The black days
13 Lifeboat capsule
14 Safety training
15 Offshore flight
16 In the air
17 Factories at sea
18 Escape chute
19 Lifeboat
20 North Sea workhorse
21 Energy: Problem or solution?
22 North Sea divers
23 Petrorama
24 Cinema
25 Temporary exhibitions
26 Kid's corner - Småtroll

Figure 5: Map and exhibitions of the Norwegian Petroleum Museum, 2016.

Results of the questionnaire indicate exhibition [nr.23] "Petrorama" was most chosen as first exhibition of interest, accounting for 25% of visitors. "Petrorama" revolves around the central question "How did Norway become an oil nation?" – as elaborated by means of a consistent and chronological and timeline in which the highlights and milestones from

Norwegian political, technological and petroleum history are presented. The information is textual and hence has to be read through (norskolje.museum, 2017).

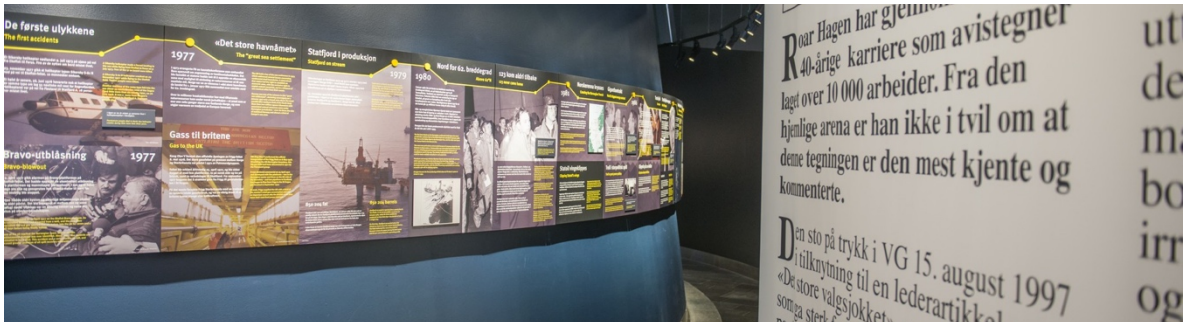


Figure 6: Exhibition "Petrorama". Source: norskolje.museum, 2016.

Besides the first exhibition of interest, results show exhibition [nr.21] "Energy: Problem or Solution?" to be second most frequently noted as chosen by 15% of a total of n=157 respondents. The latter exhibition deals with the most important energy and climate policy dilemmas facing humanity. Exhibition [nr. 2] "Prologue, an exhibition presenting Norway's petroleum history in brief" was chosen as a third.

Figure 7: Exhibition: "Energy: Problem or solution?" Source: norskolje.museum, 2016

Presentation arrangements

In order to get a better understanding on how to spark or develop interest in presented subjects and related topics, there are different ways themes can be presented at a museum, to stimulate interest in the information presented. Respondents were asked to rate their preference among the given presentation arrangements, circling the score that best represented their preference on a Likert-like scale ranging from 1 to 5 with (1) indicated a very weak preference and (5) very strong preference.

Table 3. Means and Standard Deviations for All Variables

Preferred presentation arrangements of themes	N statistic	*M* statistic	Std. statistic	Min statistic	Max statistic
The display of authentic objects in the real life settings	145	4.28	.77	2	5
Presentation by pure written information	145	3.27	1.16	1	5
The use of modern high-technology with powerful visual effects	145	4.15	.87	2	5
Live dramatized performances of certain themes	140	3.71	1.15	1	5
Simple audio-visual presentations	144	3.76	1.1	1	5
Opportunities of social contact among visitors	140	3.01	1.29	1	5
Participation in game-based activities	144	3.74	1.25	1	5
Personal oral presentations by guides	118	3.09	1.30	1	5

Shown in table the presentation with the highest average mean [*M*= 4.28, SD.77] regarded "the display of authentic objects in the real life settings", as followed by "the use of modern high-technology with powerful visual effects" [*M*= 4.15, Std. .77]. As a third, "simple audio-visual presentations" was preferred [*M*= 3.76 SD 1.1].

In order to gain a better understanding of visitation, satisfaction regarding museum visitation was measured by eight satisfaction items. On a scale from 1= very low degree to 5= very high degree) or – on a scale ranging from 1= Very dissatisfied, to 5= Very satisfied, satisfaction ratings were stated, as shown in Table 4.

Table 4. Means and Standard Deviations for All Variables

Question items on visitor satisfaction regarding museum visitation	N statistic	M statistic	Std. statistic	Min statistic	Max statistic
How satisfied are you (on a scale ranging from 1= Very dissatisfied, to 5= Very satisfied) With the friendliness of the museum staff?	145	4.6	.62	2	5
With the service facilities at the museum?	145	3.27	1.16	1	5
With your overall visit to the museum?	144	4.45	.624	2	5
To what degree (on a scale from 1= very low degree to 5= very high degree) Gave this visit value for the time spent at the museum?	144	4.30	.66	2	5
Was this museum visit an important part of your stay in the Stavanger region?	143	3.5	1.29	1	5
Would you recommend visiting this museum _to family and friends?	145	4.41	.72	2	5

Overall, satisfaction is satisfactory with an average mean of five [on a scale from 1-5]. The satisfaction scale items can be regarded measuring the same construct as measured by a resulting Cronbach's alpha of .74 and item-to-item correlation as measured significant at the 0.01 level. Items loaded on one single factor explaining 60% of variance with the lowest factor loading of .73.

Self-expressed visitor responses

In order to support quantitative findings, a total of 811 qualitative reviews were extracted from an open-social media site [Tripadvisor]. From the total, 47% of respondents noted

visitation to the Norwegian Petroleum Museum to be excellent, and 42% very good. Average visitation as based on all responses was rated by a high average mean [*M*= 4.5 based on a scale from 0-5]. From the total 811 responses, 217 included responses included "interesting" as part of the feedback. Within these feedbacks besides interesting, the qualities – educational, informative, comprehensive, learning, and understanding were frequently noted. Cognitive notions were often connected to positive affective expressions including fun, joy and play. Affective notions were often linked to engagement and surprise – or "surprising" as expressed. Extracted feedbacks were filtered on the date of August 2016. An overview of noticeable feedback responses is given below.

1) Headline: "Educational" – Feedback: "Very educational about petroleum in general and Norwegian petroleum history. Nice exhibits. What was also interesting is the introspective view questioning what Norway should do for future generations."
   - Respondent 1, August 2016, France
2) Headline: "Visit to Norwegian Petroleum Museum" – Feedback: "Our family of 5 thoroughly enjoyed the Petrol Museum. The museum was easy to understand, interesting and very educational. We asked to go into the 'catastrophe room' an attendant let us in, the room is in total darkness and my husband and I got out in 111 seconds. Our 3 daughters got out of the room on 42 seconds. This was great fun. There is a diving pod you can look in and a diving outfit to try on. The Museum has a small gift shop."
   - Respondent 2, August 2016, British
3) Headline: "Really interesting" – Feedback: "This museum is adapted for both adults and teenagers. A wide variety of activities whether to have fun or to learn the essential about petroleum and Norwegian economy. Good explanations as well. Definitely dare to ask to the reception to try the catastrophe room."

- Respondent 2, August 2016, French

4) Headline: "Engineer's delight" – Feedback: "This is about petroleum and it's place in Norwegian history. But if you're interested to what's mankind capable to build to suits its goals then it's your place."
   - Respondent 3, August 2016, French
5) Headline: "Informative fun hour"– Great way to learn about the natural resources that provide Norway with its wealth. Good historic overview of the finds and how the country benefits. Very interesting exhibition with much to learn about exploration."
   - Respondent 4, August 2015, Netherlands
6) Headline: "Interesting!" – Feedback: "The museum is very interesting and modern. You can learn a lot of facts for petroleum industry. We played on games and put on the costume of petroleum worker."
   - Respondent 5, September 2016, Bulgaria

V. Discussion

Interest Development

Based on findings, a significant interest increase was measured based upon a positive change from prior-interest [*M*=3.5] to personal interest [*M*=3.82] in the main theme of the museum, Petroleum. Comparing results with the interest development scale as developed by Hidi and Renninger (2006) in figure X, the prior-interest level as measured in this study holds a level 3 [3.5], in line with to an established situation interest or emerging individual, or personal interest. Personal interest as measured with an average *M*=3.82 correlates with a higher emerging individual interest on the four stage interest scale of Hidi and Renninger (2006). Prior interest seemingly correlates with prior-knowledge as measuring the individuals background as found in previous research (Dewey, 1975, Dahl et al, 2013). Interest development overall resulted in limited R square based on the key predictors of visitor

background – prior-knowledge and prior-interest, and situational cognitive accessibility.

This research is exploratory in nature, aiming to develop a simplistic scale to enable the measurement of key cognitive explanatory interest factors measuring the development of interest within limited timeframe of the museum visitor. As for simplicity, findings argue for more detailed question items as indicating low predictive power. In order to increase explanatory value in interest development, multiple items and further analysis of the effect of exhibitions and presentations methods on interest development can be analysed, as to better understand the effect and inter-relationships in moving beyond mere descriptions of events.

Based on results of qualitative responses as derived from open media [TripAdvisor], interest in the subject petroleum as for feedback of general visitation and experience to the Norwegian Petroleum museum, resulted in a majority of cognitive notions. Expressions frequently included – educational, informative, comprehensive, learning, and understanding. The measured qualities correlate with cognitive accessibility of vividness, cohesion, ease of comprehension as proposed by Dahl et al. (2013). When respondents had little previous interest or knowledge, respondents frequently noted to be positively "surprised" by the "interestingness" of the topic Petroleum as presented in the museum. Surprise often indicated a low pre- interest and knowledge, connected to positive affective expressions including fun, joy and play. Qualitative and quantitative findings suggest that besides the ability to build upon established subject-related interest [individual interest development] the museum sparked situational interest levels. Items on engagement and surprise in quantitative analysis, might explain more of the presence and development of [individual] cognitive interest in future works.

Exhibitions

Based upon the stated questionnaire item – "*We would like to know more about your personal interest in specific exhibition sections at the museum. Please select two exhibition*

sections that you remember the most", the most frequently remembered exhibition was measured "Petrorama". The preferred exhibition revolved around the question "How did Norway become an oil nation?" The chosen exhibition is informative – by means of text and few images highlighting the start and development of the subject presented [Offshore Petroleum]. The chosen exhibition has a strong cognitive character as mainly based on textual information, as opposed to an entertaining or affective character sparking emotional responses. The latter finding indicated prior interest and knowledge, as participants seem interested to read through rather extensive reading text. In line with previous works of Dahl et al. (2013) on visitor fascination (interest) in museum exhibitions – visitors in this study proved most interested in exhibitions presenting highlights and storytelling, as the case with the chosen exhibition number 23, "Petrorama". Exhibitions presenting topics of debate are preferred in museum settings as similarly found by Dahl et al. (2013). Topics of debate were the main presentation in the second exhibition of interest "Energy, a problem or solution?" Overall, the preferred exhibits correlate well with cognitive accessibility, comprehensiveness and overall vividness in presentation. The later qualities are noted key in developing interest as proposed by Schraw, Bruning, and Svoboda (1995). However, this paper has a focus on subject-related interest as a dependent variable, measuring object related interest in exhibitions can be interesting for future papers as relevant for the design of exhibitions in the museum. Overall as results indicate, cognitive aspects were not experienced uninteresting, as noted memorable.

Presentation methods

Based upon the question item measuring the preferred presentation method, the most frequently chosen method of "the display of authentic objects in the real life settings" argue for the importance of authenticity. The factor authenticity is not included in current measures – however of potential relevance to measuring higher-level personal interest. The second

most frequently rated choice of the presentation method "the use of modern high-technology with powerful visual effects" [*M*= 4.15, Std. .77] proves more entertaining in nature. The preference for modern high-technology indicates a combination of entertaining and sparking cognitive personal interest to be a potential interesting combination. However, entertaining aspects are argued to have a more motivational function as opposed to developmental function as stated in research (Blumenfeld et al., 2006). Motivation in cognitive engagement in learning environments by means of applying modern high-technology with powerful visual effects can be an effective means for developing interest beyond sparking "interestingness". As a third, "simple audio-visual presentations" was preferred [*M*= 3.76 SD 1.1]. The latter indicates the importance of visually appealing exhibitions, sight and sound.

Research limitations

Aiming to develop a scale capturing the key factors in order to identify interest levels and interest development, the general personal interest measurements and available relevant literature in the context of visitor research proved limited. Items and theory on interest and development ought to be more extensive, arguing to include additional items – as for example adjusted from the SIQ [Sources of Interest Questionnaire] as proposed by Schraw et al. (1995). The SIQ however is of limited use as more situational in nature. This paper argues for future research and develop of items with a focus on explanatory personal interest factors (the focus of this paper) as opposed to measuring the establishment of [motivation oriented] situational interest. Overall subject-related interest in Petroleum can potentially be better explored by means of the items as currently measuring interest in exhibitions – the exhibition question items. Exhibitions and presentations methods were explored, however not focal point in the current analysis. Items on exhibitions however might be applicable for subject-related interest, holding:

I had a general interest in this exhibition topic already before the visit
This exhibition has strongly increased my interest in the exhibition topic
This exhibition offered good and relevant information
This exhibition was entertaining
This exhibition was unique and fascinating

The items of "This exhibition offered good and relevant information", "This exhibition was entertaining", and "This exhibition was unique and fascinating" might explain more of the general interest development – in increasing the ability to measure cognitive accessibility [holding comprehension, vividness, cohesion as stated by Dahl et al. 2013] as opposed to the current single item in measuring personal interest by the item "The presentation of the main theme was very stimulating and engaging", indicating a more situational approach. The latter item "The presentation of the main theme was very stimulating and engaging" has shown to correlate however a low factor loading as compared to the other factors of prior-interest and prior knowledge in explaining interest development indicates the latter item to be better measured independently as establishing the level of situational interest as opposed to measuring personal interest development. In measuring cognitive accessibility, items including ease of comprehension ("The content was easy to remember"), cohesion ("The exhibit's main ideas were presented clearly") vividness ("The content included vivid and exciting details"), engagement "The content was thought provoking" , as proposed by the SIQ [Sources of Interest Questionnaire] of Schraw et al. (1995) might increase further explanatory value.

The related items in measuring interest in a subject by means of questioning comprehension, vividness, and cohesion – known as "cognitive accessibility" mainly relates

to object-related interest the exhibitions and museum settings as presented. However, interest to exploring their effect on interest development is interesting over time. As stated, prior-knowledge and prior interest are key to interest development (Blumenfeld et al., 2006).

As prior-knowledge and prior- interest are related in the before phase, measurements however left established- after interest out of the analysis. As noted by Dewey (1975) interest can lead to meaningful learning, long-term storage of knowledge and provides the motivation for further learning (Schiefele, 1991). Future works can better connect the input – as the focus in current work, connect its outcome in building more upon the education approach. The latter approach can increase validity of identifying increases and actual effect of knowledge on established interest. As prior-knowledge is an indicator of established interest needed for interest development, actual developed knowledge is to be analysed from an stronger educational point of view as first developed by Dewey (1913). Dewey (1975) furthermore separated interest-oriented learning from effort based-learning. Whereas interest-based learning has a clear purpose, effort based learning lacks mental purpose. Dewey argues interest is characterized by an active "propulsive" state as a predictive factor based on real objects and higher personal meaning. Besides measuring actual developed, or increase in knowledge after visitation, validity can be hence increased by measuring goal-orientation before and after visitation as noted a relevant predicting factor in not only sparking interest but developing personal interest as relevant for the cognitive development of education Dewey (1975). In all, based upon the discussion of findings and established literature works, validity can be potentially increased by adding the following indicators

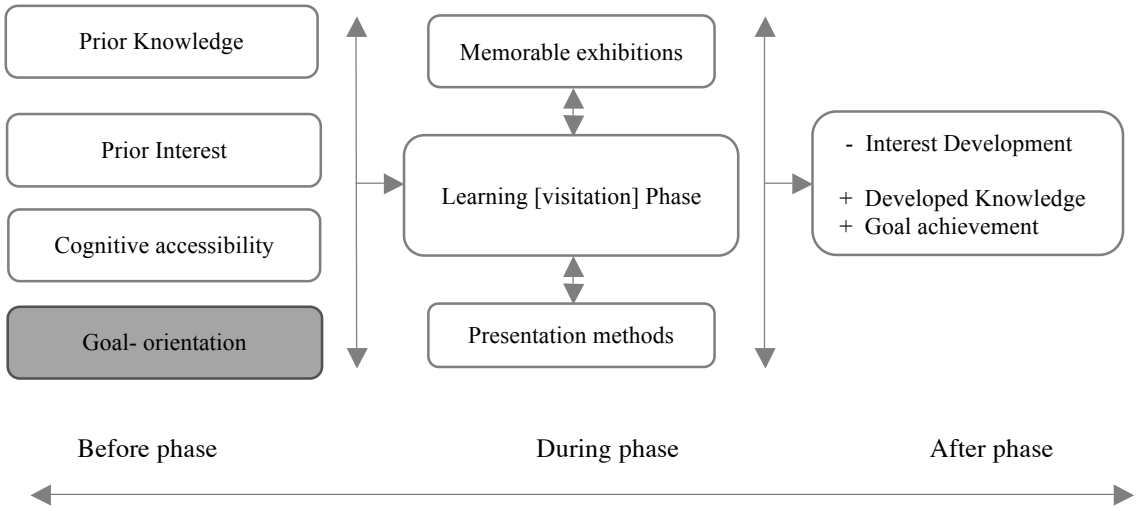


Figure 8: Proposed dimensions effecting [before] and explaining interest development [after].

Qualitative visitor responses have shown to increase explanatory quality of quantitative findings on interest development. Findings call for implementing open-ended questions or observed by means of sound during the process of visitation in adding validity as opposed to data found on open-media sites [Tripadvisor]. Open media sites are however an accepted and trusted data collection in research. Critical incident question such as “What if anything, stood out during visitation?” can help make better inferences in establishing requirements for related explanatory measures (criteria). Critical incident techniques also help collect behavioural facts (Flanagan, 1954). As for the process during visitation, frequency [first time visitor] total time spent [objectively measured] and coverage [number of total exhibitions visited] can be explored to increase validity of findings, enabling the establishment of relevant algorithms in order to predict visitation.

Overall, research findings relate to the previous literature works on interest development and established cognitive approaches hence indicating a certain quality.

However, question items were based upon cognitive focused works on interest published in scientific peer reviewed journals and often cited works, however proven of limited value.

Data as mainly subjective, ought to increase reliability by means of applying a triangulation approach adding additional observational measurements. The latter opens up for real-time analysis during the process of visitation. Observations give insight into what besides visitors say, what they actually do. Neuman (2011) stated that "as researchers, we are encouraged to employ observation skills that allow us to examine something from multiple points of view" (p. 164). In achieving triangulation, besides visual data on visitor movement or photographic collections, sound can be analysed. The latter will enable to move from the traditional focus of before and after measures as most often applied in research, towards more extensive measurements during the dynamic process of actual visitation.

As for the reliability of question items, personal interest was mainly explored by limited [single] items, calling for richer measures in order to make better statements about interest development.

Future works

This paper calls for additional research efforts on connecting qualitative measures to quantitative measures as to extract richer and novel explanatory factors related to interest development. As factors explaining interest development based on cognitive development seem to overlap situational factors, the inter-relationship ought to be further explored. What separates situational interest from personal interest, and what are the connecting in-between factors? The latter factors will reveal what accounts for the actual transition from situational to individual personal interest, as useful for managerial purposes and the design of exhibitions in museum settings. Future research can establish to what degree human is behavior predictable, exploring the limits of predictability in human dynamics during visitation, as based upon relevant studies of among others Song, Qu, Blumm and Barabási

(2010). As time is increasingly limited, dynamics data collection during visitation can be connected to data before and after visitation by digital means.

VI. Conclusion

Empirical results are based on n=145 local and international visitors´ self-administered quantitative questionnaires filled in after visitation at the Norwegian Petroleum Museum. In addition, n= 217 self-reported qualitative responses published on open-media by visitors after visitation have been explored. Data collection had the aim of identifying and measuring subject-related personal interest development into the topic of Petroleum – oil and gas, the subject central in museum visitation [Norwegian Petroleum Museum]. The main research question was whether, and how visitors [personal, cognitive] level of interest in the topic presented – Petroleum– can be significantly increased by means of the process of museum visitation. Empirical results indicate that in the case of museums building around a specific topic of interest – the latter can be achieved. The Norwegian Offshore Petroleum, as the case study site – builds clearly around the single subject Petroleum. Significant differences in interest prior visitation, as compared to after visitation indicate the possibility of identifying interest levels. The latter correlated with previous research, as transitions were noted from situational interest ["interestingness") prior to visitation, towards personal [cognitive] interest after visitation, is notified. Measured interest development denotes the potential for museums to transform established situational interested into a personal cognitive interested, or spark "interestingness" for further explorations. Self- expressed qualitative responses consisted of cognitive related expressions – educational, informative, comprehensive, learning, and understanding. The latter findings indicate validity and usefulness of the chosen quantitative cognitive research approach. The applied quantitative approach – aimed for simplification, measured key explanatory cognitive interest factors, however as noting limited explanatory value, over-simplified. Results however indicative motivational situational interest factors -

can be tested for their developmental purpose, as part of [cognitive] measures of personal interest development. As for example, goal-orientation and surprise can be explored as to measure their effect on interest development. Learning, of central relevance to museums and presentations, ought to be further explored in order to measure the effect of exhibitions and preferred presentation methods. Beyond prior-knowledge, established knowledge after visitation ought to be identified. Multidimensional measures ought to build beyond current traditional before and after measures, in order to better measure the dynamic process of actual visitation. Dynamism better suits the future digitalisation and enables to establish predictive time/frequency factors. Observations of visitors during the process of visitation can to increase reliability to current subjective measures. Objective measures improve to detect trends and make future predications. Future works can run critical incidents to identify relevant and valid factors in what leads to the development of [personal, cognitive] interest and actual knowledge development, as to be analysed in future works.

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Attachments

YOUR VISIT TO THE NORWEGIAN PETROLEUM MUSEUM:

QUESTIONNAIRE ABOUT YOUR INTEREST & EXPERIENCES

This short survey is part of an international research project conducted by the University of Stavanger and Nord University. Your participation will be of great value to the development of new knowledge on how to best improve visitor experiences at museums in Norway. Thank you very much for sharing your experiences with us!

……

……

Country of residence (please spell out in CAPITAL LETTERS)**:**	**Your age** (in years)**:**	**Sex:** ☐ M ☐ F
Do you visit the museum with a (tour) guide? ☐ No ☐ Yes → with**:** ☐ A Museum tour guide ☐ An accompanying tour guide		
Do you visit this museum? ☐ Alone ☐ With others → with**:** ☐ Spouse / partner ☐ Family/friends with children ☐ Family/friends without children		
What is the occasion for this museum visit? Please select only one option that suites the best) ☐ Self-organized roundtrip in Norway ☐ Organized trip by tour operator ☐ Cruise-ship visit ☐ Visiting family / friends ☐ Work/Conference/ Seminar ☐ I am a local visitor ☐ Other:		

1: Now we would like to learn about your interest in the main theme of this museum: The Petroleum Industry – Oil & Gas. In response to the following statements on the main theme of the museum, *please circle the rating score that best presents your position on the scale from 1 to 5, where 1= Strongly **dis**agree and 5= Strongly agree*

Interest of the main theme; the Petroleum industry - Oil & Gas	Your rating score				
I had a general interest in the main theme already before the visit	1	2	3	4	5
I had a good knowledge of the main theme already before the visit	1	2	3	4	5
The visit to this museum has increased my interest in the main theme	1	2	3	4	5
The presentation of the main theme was very stimulating and engaging	1	2	3	4	5

2. There are different ways and possibilities of presenting the themes at this museum. What are <u>your preferences</u> among the following <u>types of presentation arrangements</u>? *Please circle the score that best presents your preference on a scale ranging from 1 to 5, where <u>1= Very weak preference</u> and <u>5= Very strong preference</u>*:

Suggested presentation arrangements	Your rating score				
The display of authentic objects in the real life settings	1	2	3	4	5
Presentation by pure written information	1	2	3	4	5
The use of modern high-technology with powerful visual effects	1	2	3	4	5
Live dramatized performances of certain themes	1	2	3	4	5
Simple audio-visual presentations	1	2	3	4	5
Opportunities of social contact among visitors	1	2	3	4	5
Participation in game-based activities	1	2	3	4	5
Personal oral presentations by guides	1	2	3	4	5

Continuation on the <u>back page</u>

3. We would like to know more about <u>your personal interest</u> in specific exhibition sections at the museum. <u>Please select two exhibition sections that you remember the most</u>. (The sections can be found in <u>the list of exhibitions</u> [1 - 35]). *Please respond to the <u>following statements</u> by a <u>making a circle</u> at the rating score that best presents your position ranging from <u>1= Strongly **dis**agree</u> to <u>5= Strongly agree</u>:*

A. **Exhibition section of first choice:** *Please indicate the <u>exhibition section **number**</u>*: _____

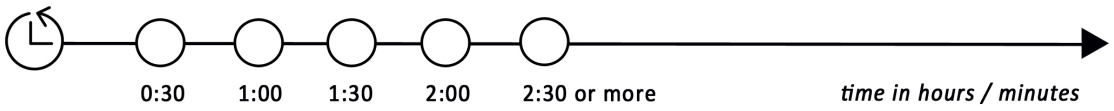
Personal Interest of the exhibition section	Your rating score				
I had a general interest in this exhibition topic already before the visit	1	2	3	4	5
This exhibition has strongly increased my interest in the exhibition topic	1	2	3	4	5
This exhibition offered good and relevant information	1	2	3	4	5
This exhibition was entertaining	1	2	3	4	5
This exhibition was unique and fascinating	1	2	3	4	5

B. **Exhibition section of second choice:** *Please indicate the exhibition section **number**:*

Personal Interest of the exhibition section	Your rating score				
I had a general interest in this exhibition topic already before the visit	1	2	3	4	5
This exhibition has strongly increased my interest in the exhibition topic	1	2	3	4	5
This exhibition offered good and relevant information	1	2	3	4	5
This exhibition was entertaining	1	2	3	4	5
This exhibition was unique and fascinating	1	2	3	4	5

4. Overall aspects of your visit to this museum

How long time have you approximately spent at the museum all together? Please cross the circle that best presents your time spent at the museum on the scale from half an hour (0:30h) to 2:30 hours (2:30h) or more:



How satisfied are you (*on a scale ranging from 1= Very dissatisfied, to 5= Very satisfied*)	Satisfaction score				
With the friendliness of the museum staff?	1	2	3	4	5
With the service facilities at the museum?	1	2	3	4	5
With your overall visit to the museum?	1	2	3	4	5

To what degree (*on a scale from 1= very low degree to 5= very high degree*)	Degree score				
Gave this visit value for the time spent at the museum?	1	2	3	4	5
Was this museum visit an important part of your stay in the Stavanger region?	1	2	3	4	5
Would you **recommend** visiting this museum _to family and friends?	1	2	3	4	5

SPØRREUNDERSØKELSE OM DIN INTERESSE BAK OG OPPLEVELSE AV DITT BESØK VED NORSK OLJEMEUSUM

Denne undersøkelsen er den del av et internasjonalt forskningsprosjekt ved Universitetet i Stavanger og Nord Universitetet. Din medvirkning i prosjektet vil ha stor betydning for å kunne utvikle ny kunnskap som kan bidra til forbedringer av opplevelsene ved norske museer. Vi takker så mye på forhånd for at du er villig til å bruke noen minutter på dele dine oppfatninger og erfaringer ved dette besøket med oss!

……

Fast bostedsland (vennligst benytt STORE BOKSTAVER)**:**	**Din alder** (antall år)**:**	**Kjønn**: ☐ K ☐ M
Har du benyttet en guide ved dette besøket? ☐ Nei ☐ Ja → type guide: ☐ Guide ansatt ved museet ☐ Egen ledsagende turguide		
Jeg har besøkt dette museum: ☐ Alene ☐ Sammen med → ☐ Ektefelle/partner ☐ Familie/venner med barn ☐ Familie/venner uten barn		
I hvilken anledning gjorde du dette museumsbesøket? Del av (marker bare ett alternativ som passer best): ☐ Selvstendig organisert reise i Norge ☐ Reise organisert av turoperatør ☐ Cruisebåt anløp ☐ Besøk hos familie/venner ☐ Arbeid/konferanse/seminar ☐ Jeg er bosatt i regionen ☐ Annet **:**		

1: SPØRSMÅL OM HOVEDTEMA VED NORSK OLJEMUSEUM (NORSK OLJEINDUSTRI - OLJE OG GASS) Hvor enig er du i følgende påstander om ditt forhold til museets hovedtema: *Markere ditt standpunkt ved å tegne en sirkel rundt det som passer best for deg på en skala fra 1 til 5 hvor 1=svært **u**enig og 5= svært enig*.

Min interesse for museets hovedtema: Norsk oljeindustri – olje og gass:	Mitt standpunkt				
Jeg hadde en generell interesse for hovedtemaet allerede før dette besøket	1	2	3	4	5
Jeg hadde god kunnskap om hovedtemaet allerede før dette besøket	1	2	3	4	5
Besøket ved dette museet har økt min interesse for museets hovedtema	1	2	3	4	5
Presentasjonen av hovedtemaet var svært stimulerende og engasjerende	1	2	3	4	5

2: SPØRSMÅL ANGÅENDE ULIKE MULIGHETER TIL Å <u>PRESENTERE MUSEETS TEMAER</u> PÅ

Museet ulike temaer kan presenteres på ulike måter. Hvordan er **dine preferanser** i forhold til følgende presentasjonsmåter: *Marker hva du foretrekker ved en sirkel rundt det tallet som passer best på en skala fra 1 til 5 hvor <u>1= svært svak</u> preferanse og <u>5= svært sterk</u> preferanse*

Mulige presentasjonsmåter	Mitt standpunkt				
Utstilling av autentiske gjenstander innenfor en virkelighetsnær setting	1	2	3	4	5
Presentasjoner gjennom rent skriftlig informasjon	1	2	3	4	5
Bruk av moderne høyteknologi med overveldende visuelle effekter	1	2	3	4	5
Levende dramatiserte framføringer av enkelte temaer?	1	2	3	4	5
Enkle audiovisuelt baserte utstillinger	1	2	3	4	5
Mulighetene til kontakt med andre besøkende	1	2	3	4	5
Deltakelse i aktiviteter basert på spill og lek	1	2	3	4	5
Muntlige presentasjoner av en guide	1	2	3	4	5

3: **<u>Din personlige interesse</u> vedrørende <u>utvalgte utstillinger</u> ved museet: <u>Velg to av museets utstillinger som du husker best</u>**. (De ulike utstillingsseksjonene med <u>nummer vises i listen over utstillinger</u> ([utstilling 1 til 35]). *Marker hvor enig du er i følgende påstander ved en sirkel rundt det som passer best ut fra en skala fra 1 til 5 hvor <u>1= svært **u**enig</u> og <u>5= svært enig</u>*.

A. Din **<u>første</u> utvalgte utstilling**: Utstilling Nr. _____

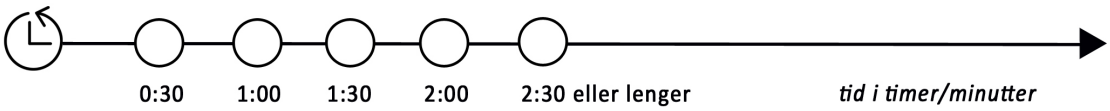
Min personlige interesse knyttet til denne utstillingen	Mitt standpunkt				
Jeg var generelt interessert i temaet for denne utstillingen allerede før besøket	1	2	3	4	5
Denne utstillingen har økt min interesse for dette utstillingstemaet betydelig	1	2	3	4	5
Denne utstillingen bidro med god og relevant informasjon	1	2	3	4	5
Denne utstillingen var underholdende	1	2	3	4	5
Denne utstillingen var unik og fasinerende	1	2	3	4	5

B. Din **andre utvalgte utstilling**: Utstilling Nr. _____

Min personlige interesse knyttet til denne utstillingen	Mitt standpunkt				
Jeg var interessert i temaet for denne utstillingen allerede før besøket	1	2	3	4	5
Denne utstillingen har økt min interesse for dette utstillingstemaet betydelig	1	2	3	4	5
Denne utstillingen bidro med god og relevant informasjon	1	2	3	4	5
Denne utstillingen var underholdende	1	2	3	4	5
Denne utstillingen var unik og fasinerende	1	2	3	4	5

4: GENERELL BEDØMMELSE AV DITT BESØK

Hvor lang tid tilbrakte du i alt dette museet? *Marker ved ett kryss på den sirkelen som passer best***:**



Tilfredshet: Hvor tilfreds er du (*på en skal fra 1= Svært **u**tilfreds til 5= svært tilfreds*)	Min tilfredshet				
Med personalets vennlighet	1	2	3	4	5
Med museets servicefasiliteter?	1	2	3	4	5
Med museumsbesøket totalt sett?	1	2	3	4	5

I hvilken grad (*ut fra en skala fra 1= i svært **liten** grad til 5= i svært stor grad*)	Min vurdering				
Synes du at du fikk god uttelling for tiden du har brukt til dette museumsbesøket?	1	2	3	4	5
Utgjorde dette museumsbesøket en viktig del av ditt opphold i Stavanger regionen?	1	2	3	4	5
Ville du anbefale din familie og dine venner å besøke dette museet?	1	2	3	4	5

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